96-0001570

Department of Energy
Washington, DC 20585

APR 04 1996

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DNF SAFETY BOARD

Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
Suite 700
625 Indiana Avenue, N.W.
Washington, D.C. 20004

Dear Mr. Chairman:

The completed items from Commitment N.4.2 called for in the Department's Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 94-4 associated with the Disassembly and Assembly mission area are enclosed. A list of the deliverables is provided as Enclosure 1 to this letter.

If you have any questions, please contact me or have your staff contact Phil Aiken of my staff at (301) 903-4513.

Sincerely,

for

Thomas P. Seitz
Deputy Assistant Secretary for
Military Applications and
Stockpile Management
Defense Programs

8 Enclosures

cc w/enclosures:
M. Whitaker, S3.1

MARTIN MARIETTA

ATTACHMENT 1

MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX 2008
OAK RIDGE, TENNESSEE 37831

96/1570

February 23, 1996

Mr. R. J. Spence
Department of Energy, Oak Ridge Operations
Post Office Box 2001
Oak Ridge, Tennessee 37831

Dear Mr. Spence:

Contract DE-AC05-840R21400, Report of Readiness to Proceed with Operation of the Disassembly and Assembly (D&A) Mission Area - Nuclear

The Lockheed Martin Energy Systems, Inc. (LMES), Management Self-Assessment (MSA) was completed satisfactorily on December 8, 1995. The LMES Readiness Assessment (RA) was completed on January 26, 1996. The RA team concluded that the Quality Organization (QO) was not yet prepared to resume operations due to concerns with procedures, Criticality Safety Approvals (CSAs), training, and certification. Members of the RA team were brought back to reassess these areas on February 19, 1996. The team concluded that the areas of training and procedures were lacking the formal controls necessary to support long-term operations. However, the team believed that adequate interim measures were sufficiently in place to warrant continuation of resumption activities once the pre-restart findings were resolved. The final reports for both assessments, including addendums, are enclosed.

All prerequisites from the D&A Plan of Action (POA) have been completed to ensure that personnel directly involved in the operations of the facility are trained and qualified to the effective procedures. All actions in the Request for Approvals required for D&A resumption have been completed. The equipment to be used in the operation is fully capable to support operations. Necessary documentation associated with the facility is in place and auditable. All post-restart findings from the LMES MSA and RA, as well as the Y-12 Site Office Restart Team assessment of D&A, have been identified and are being tracked. The remaining open Receipt, Storage, and Shipment Department of Energy RA post-restart findings have been evaluated against D&A restart requirements and need not be closed for D&A resumption. During management's final review of the closure packages for the LMES RA pre-restart findings, some discrepancies were identified and are included in the list of findings that must be closed prior to restart.

The material condition of D&A mission-area supporting facilities is satisfactory. There are no incomplete major modifications and no significant open work orders. Preventative maintenance and surveillance test requirements are current. I am ready to restart

operations associated with C5 disassembly, operation of the electron beam welding, and QO functions in support of assembly operations when the following pre-restart findings and items have been closed:

1. Not all procedures identified in the D&A POA have been issued. The limits and conditions from CSAs are being incorporated into these procedures. Training to revised procedures will be completed by March 1, 1996. (LMES MSA finding SE-13 and LMES RA finding OP 1-1)

2. One quality procedure did not include the requirements of an applicable CSA. This will be corrected by February 24, 1996. (LMES RA finding OP 1-6)

3. The most recent revision to six quality CSAs was not in the facility on February 20, 1996. This will be resolved when the most recent revision of these CSAs become effective on February 24, 1996. (LMES RA finding OP 1-7)

4. Fire suppression system drawings identifying the system configuration for the D&A facility (9204-2E), as well as D&A operations in 9204-2, will be completed by March 1, 1996.

5. Discrepancies in equipment identified on the restart list will be resolved by February 25, 1996. (LMES RA finding OP 5-1)

6. Quality organization personnel will complete training on chapter 5 of the Nuclear Operations Conduct of Operations Manual, On the Job Training, by February 27, 1996. (LMES RA finding TQ 1-1)

Subsequent startup of additional processes within the D&A facility will be evaluated by LMES in accordance with Procedure Y10-190, *New Activity Startup Requirements*. If there are any questions with respect to the planning basis or extent of schedule definition, please direct your comments to R. K. Roosa, 6-4901.

Sincerely,

F. P. Gustavson
Vice President
Defense and Manufacturing

RKR:gfp

Enclosures: As Stated

cc: T. R. Butz
F. P. Gustavson
M. K. Morrow
R. K. Roosa (RC)

5

WASILKO 96/1570

LOCKHEED MARTIN

Memorandum

Date: February 7, 1996

To: F. P. Gustavson

From: JPF J. P. Flynn, 701 SCA, MS-8241, 6-4614

Subject: **Readiness Assessment Report for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant**

In accordance with R. K. Roosa's memo of January 12, 1996, a readiness assessment (RA) was conducted for Disassembly/Assembly Activities. Fifteen copies of the report are attached for your distribution.

Due to the fact that the RA team determined that the Quality Organization (QO) was not prepared to resume operations, this should not be considered a final report. Once we have reassessed QO, an addendum to the report will be issued.

Once the concerns identified in QO have been adequately resolved, we will bring the appropriate RA team members back to reassess QO in the areas of procedures, Criticality Safety Approvals, and training/ certification. This assessment will be based upon Sections OP-1, TQ-1, TQ-2, TQ-3, TQ-4, and TQ-5 (except drills) of Appendix A of the attached report.

JPF:lhs

Attachment

Y/OA-6249

Y-12

OAK RIDGE Y-12 PLANT

LOCKHEED MARTIN

Lockheed Martin Energy Systems, Inc. Readiness Assessment Report for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant

January 15-26, 1996

This document has been reviewed by the Y-12 Classification Office, and has been determined to be

UNCLASSIFIED

This review does not constitute clearance for Public Release.

Date 2/7/96

MANAGED BY
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

UCN-13672 (26 6-95)

Y/OA-6249

Lockheed Martin Energy Systems, Inc.
Readiness Assessment Report
for the
Resumption of
Disassembly/Assembly Activities
at the
Oak Ridge Y-12 Plant

January 15-26, 1996

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I, by signature here, acknowledge that I concur with the findings and conclusions of this report.

N. T. Ford
Training/Qualification

J. J. Hummer
Management

for J. E. Lee
Operations/Procedures

R. K. McConathy
Training/Qualification

H. A. Oliver III
Operations/Procedures/Safety Envelope

R. D. Shaffer
Management

B. A. Wilson
Operations/Procedures

G. P. Zagursky
Safety Envelope

APPROVED: _____ DATE: 2/7/96
J. P. Flynn, RA Team Manager

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EXECUTIVE SUMMARY

The Lockheed Martin Energy Systems, Inc. (LMES), Independent Readiness Assessment (RA) is one of the activities to be completed prior to resuming disassembly/assembly (D&A) activities at the Department of Energy (DOE) Y-12 Site. The results of this RA will be used to determine whether the core objectives as described in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," have been adequately met.

Operations at the Y-12 Plant were shut down in September 1994 as a result of operational deficiencies noted by the Defense Nuclear Facilities Safety Board (DNFSB) staff during routine activities. LMES initiated a Type "C" Investigation to determine the full significance of the deficiencies observed. The investigation revealed that several improvements were necessary to resume operations in a disciplined manner. The resulting extended shutdown led to the completion of this RA in accordance with DOE Order 5480.31, "Startup and Restart of Nuclear Facilities," and DOE Standard 3006-93, "Planning and Conduct of Operational Readiness Reviews (ORR)."

The RA was conducted January 15-26, 1996. The RA was a systematic inquiry into the ability of the Y-12 Plant staff to conduct D&A activities in a safe and disciplined manner. The scope of the RA was determined by the core objectives identified and approved in the POA. Although many core objectives were assessed, the focus of this RA was on management, personnel qualification, training, procedures, safety culture, and administrative support systems.

While the scope of the POA addressed many activities, including assembly, disassembly, and materials testing laboratory operations, the RA team recommends only resumption of operations associated with C5 disassembly and operation of the electron beam welders. Subsequent startup of additional processes within the D&A facility must be evaluated by LMES in accordance with approved procedures.

The numerous issues associated with the Quality Organization (QO) in the areas of training and certification programs, procedures, and Criticality Safety Approvals indicate that the organization is not at an adequate level to support the full scope identified in the POA. Prior to resuming QO activities, the QO activities should be reassessed by the LMES RA team.

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I. INTRODUCTION

A. General

During a review of Building 9204-2E containerized storage operations and applicable Criticality Safety Approvals (CSA) on September 22, 1994, violations of administrative safety controls associated with material storage arrays were observed. Operations personnel, upon discovery of the criticality safety violation, did not immediately administratively control the area (i.e., ensuring that personnel were kept at a safe distance away from the array). They also did not immediately notify Nuclear Criticality Safety Department (NCSD) personnel or the plant shift superintendent. This was a violation of LMES and Y-12 Plant training and procedures. Following the event, all CSAs were walked down and seven categories of criticality safety nonconformances were identified with a total of 1,344 individual observations.

Examination of the data from the evaluation of the CSA walkdowns, the occurrence report covering the initial infraction, the Type "C" Investigation, and DNFSB Recommendation 94-4 indicated the basic cause was a lack of rigor in conduct of operations that permitted less than strict compliance with procedures. Within the umbrella of conduct of operations, the principal failure was personnel not following procedures with the rigor required. A contributing factor was the lack of training on CSAs in particular. CSAs were not always clearly written, and their limitations were not well understood by some personnel.

DOE Assistant Secretary for Defense Programs memorandum of November 8, 1994, *Resumption of Y-12 Operations*, to the Oak Ridge Operations Office has stipulated that the RA is the appropriate format to ascertain readiness for restart. The Assistant Secretary for Defense Programs (DP-1) has stated his concurrence that the manager, Oak Ridge operations office (ORO), will be the restart authority in this same memorandum.

B. Y-12 Plant

The Y-12 Plant is one of two installations in Oak Ridge, Tennessee, managed by LMES for DOE. LMES also manages the Oak Ridge K-25 Site. For four decades the Oak Ridge Y-12 Plant has been the national center for the handling, processing, storage, and disassembly of all DOE-controlled enriched uranium (EU) materials and components as well as depleted uranium (DU) and other special materials components.

The DOE Defense Programs at the Y-12 Plant include the dismantling of nuclear weapons components returned from the national arsenal, serving as the nation's storehouse for special nuclear materials, maintaining nuclear weapons components production capability and stockpile support, and providing special production support for other DOE programs and customers. In addition, as the primary EU repository for the United States, the Y-12 Plant has the facilities and security systems for EU storage, chemical recovery, and material purification and fabrication.

Resumption activities for the Y-12 Plant are divided into mission areas that are defined by programmatic mission descriptions and needs. The RA Implementation Plan (Appendix A) addresses the scope of the resumption of D&A activities, which is one of the mission areas for the Y-12 Plant.

C. Disassembly Activities

Disassembly activities in Building 9204-2E are presently limited to manual techniques and a single-lathe operation. These activities were in progress prior to the September 22, 1994 stand down. Disassembly begins with receipt of the unit from the storage area (storage activities were assessed for readiness as part of the Y/OA-6233, "Martin Marietta Energy Systems, Inc., Readiness Assessment Plan of Action for the Receipt, Storage, and Shipment of Special Nuclear Materials at the Oak Ridge Y-12 Plant." Upon receipt of the units on the second floor of Building 9204-2E, they are transferred by forklift truck to the "tear-down" area. The "tear-down" area is a portion of the Material Access Area (MAA) on the second floor. The unit is then removed from its container and placed on a disassembly work table using an overhead crane and program-specific lifting device. The disassembly work table is then positioned in a recirculating walk-in hood. Disassembly of the unit is then performed using manual hand tools (hammers, chisels, pry bars) and pneumatic devices (chipping hammers, chisels, wrenches). A small Hardinge lathe is used for disassembly activities outside the walk-in hood. As the parts are removed, they are identified, verified, weighed, and segregated for further disassembly operations or transferred out of the area. Segregated parts are then transferred to the materials management area for final disposition to recovery processing areas (recovery processing will not be included in the scope of the RA).

D. Assembly Activities

Assembly activities in Building 9204-2E include all aspects of assembly processing, from component precleaning to packaging. All assembly processes were approved for operation prior to the September 22, 1994, stand down, although specific programmatic operations may not have been ongoing at that time.

Assembly processing begins with receipt of the components from the storage area. Upon receipt of the components, they are transferred to the "cleaning" area. Prior to beginning cleaning operations, all components are verified for certification and material identification. Cleaning operations are performed by hand-wiping components with solvent. Additional surface preparation may be completed by electropolishing components in a charged solution or power brushing with a stainless steel brush. Cleaned components are wrapped in Kraft paper for protection and placed back in their respective containers for movement to the second floor assembly area.

Examples of other pretreatment activities include containerizing and baking of components, adhesive coating, and electrical testing. After component cleaning or pretreatment, the components are moved to the assembly work station required for the next operation. These work stations and work areas include environmentally enhanced rooms; assembly stands; surface plates; electron-beam, laser, gas tungsten arc, gas metal arc, and spot welders; bond stands, vacuum furnaces, machining stations, lathes, and leak-test stations. The assembly process may require several assembly steps with repeated use of some of the work stations or work areas. Interfaces with QO personnel may also occur several times during the assembly process to facilitate verification of product acceptance criteria. These interfaces may be with radiography, dye penetrant, ultrasonics, or dimensional inspection personnel as required by the specific process or program. Upon completion of assembly operations, the component is packaged in a container approved for off-site shipment.

E. Material Testing Laboratory

Materials testing operations under this resumption plan are limited to Room 311 in Building 9204-2E. Materials testing begins with the receipt of small samples of metallographic or mechanical properties evaluation.

Upon receipt of metallography samples, they are mounted in epoxy molds and, after hardening, are ground and polished to a flat, smooth surface. Samples are then moved to photographic stations for microscopic evaluation and photographic documentation. Additional steps to etch or anodize the surface using nitric acid and ammonium hydroxide, respectively, may be required prior to photographing.

Upon receipt of mechanical properties test samples, they are tested on standard industrial-type mechanical test equipment, usually to failure, to produce the required mechanical properties data.

F. Readiness Assessment Process

The RA was conducted to determine whether D&A activities were ready to resume the activities that were shut down as a result of events on September 22, 1994.

An Implementation Plan (Appendix A) was prepared to comply with the requirements of DOE Order 5480.31 and DOE-STD-3006-93. The scope of the RA is described in the POA, Y/OA-6238, which was prepared by Y-12 Plant line management and approved by the ORO manager.

The Implementation Plan contains the overall assessment procedure and its appendices, including the Criteria and Review Approach Documents (CRAD) that define the review objectives and criteria as well as the approach for assessing each objective.

Results of the assessment are provided in this report. Deficiencies are classified as prestart findings, which must be closed prior to resumption of operations; poststart findings, which should have approved corrective action plans and milestones in place prior to resumption; or observations, which may be used by management to support continuous performance improvement.

The RA team consisted of three LMES employees, one Lockheed Martin Corporation employee, two Lockheed Martin Energy Research Corporation employees, and three technical consultants.

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II. READINESS ASSESSMENT EVALUATION

A. Management (MG)

The management area was assessed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," (POA) and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant." The assessment was conducted to validate that management systems required to support resumption of D&A activities were in place, or adequate formal compensatory measures had been instituted to address identified deficiencies. These compensatory measures had to identify the required interim actions, a schedule for gaining compliance, and qualitative and/or quantitative measures to determine when adequate compliance is achieved.

The review approach included document reviews, interviews, observation of specific work activities, and facility walkdowns. This review took into account the results of the LMES Management Self Assessment (MSA) and the Y-12 Site Office Restart Team (YSORT) findings. The specific organizational levels applicable to this review were identified in the POA and included the floor level technicians and supervisors in QO and D&A up to and including the manager, nuclear operations. The results of the management review were documented daily on the Assessment Forms (Form 1) included in Appendix B. Specific deficiencies were documented on the Deficiency Forms (Form 2) contained in Appendix C.

The management review assessed the position descriptions, evidence files, and the performance appraisal process to determine if managerial qualifications of LMES personnel responsible for facility operations were adequate. The documentation in official records demonstrates that the incumbent managers identified in the POA meet the education, experience, technical, and medical standards.

The functions, assignments, responsibilities, and reporting relationships of the line management were evaluated based on overall definition, understanding, and implementation. The areas of emphasis included D&A and QO as identified in the POA. The mentor program was also reviewed to ensure that qualifications, functions, assignments, responsibilities, reporting relationships, and experience, as well as a strategy for removal of mentors, were adequate. The review of evidence and interviews with personnel identified in the POA as being required to support D&A operations indicated that the reporting relationships below the department manager were not clear. The QO does not have responsibilities, accountabilities, and authorities identified for specific positions within the organization (see RA-MG-2-2). Additionally, the conditions under which mentors may be removed have not been defined and documented. The current and draft Y-12 Plant mentor program descriptions do not contain measurable criteria for determining when mentors established as compensatory measures associated with disassembly operations can be removed. This is not an issue of safety and does not affect the resumption of operations (see RA-MG-2-1). The last area where a deficiency was noted pertained to the qualification of mentors needed to support Strategy III disassembly activities. Strategy III mentors have been established as compensatory measures for requests for approvals (RFA) associated with DOE Order 5480.19. To address this, D&A has prepared a list of procedures that require a mentor to be present when the procedures are performed. Currently, there are no respirator qualified

mentors available to support disassembly activities associated with the walk-in hood and, as such, the Strategy III required compensatory measures cannot be met (see RA-MG-2-3).

A review was conducted of the system in place to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and internal LMES organizations. The program evaluation centered on the Energy Systems Action Management System (ESAMS). Some minor deficiencies were noted with items being tracked outside of ESAMS and items being closed when corrective actions were not 100 percent complete (see RA-MG-3-1).

The 17 nonconformances associated with DOE orders applicable to D&A were reviewed to determine that approved schedules existed, required actions described had been adequately addressed at all levels, and operations management had reviewed and verified that compensatory measures or corrective actions were in place. Some of the random sample of requests for approval had not received DOE-ORO approval (see RA-MG-4-1).

The program to promote a site-wide safety culture at the Y-12 Plant was reviewed as it related to D&A and QO operations. Awareness training session records, occurrence reports, and the employee concerns program were assessed to determine timeliness and effectiveness of actions. The team interviewed all levels of the line organizations associated with D&A activities to determine their level of understanding of the safety message communicated during the awareness sessions conducted following the September 22, 1994, incident. During these interviews, personnel indicated they had a basic understanding of the safety message; however, the recall of precipitating events was limited (see RA-MG-5-1).

The overall conclusion in the management area is that, after resolution of the prestart findings, adequate rigor and programmatic controls are in place to resume operations associated with C5 disassembly as long as mentors are in place.

The deficiencies identified in the management area are as follows:

RA-MG-2-1	Finding	Mentor program removal criteria are not measurable or verifiable. (Poststart)
RA-MG-2-2	Finding	A clear understanding of reporting relationships and authorities has not been communicated below the department manager level. (Prestart)
RA-MG-2-3	Finding	Mentors assigned as Strategy III are not respirator qualified to support walk-in hood activities. (Prestart)
RA-MG-3-1	Observation	There is insufficient documentation to support closure of ESAMS items.
RA-MG-4-1	Finding	RFAs generated for DOE orders related to D&A activities have not all been approved by DOE-ORO. (Prestart)

RA-MG-5-1	Observation	Personnel do not recall the events that precipitated the September 1994, incident as they related to the management safety awareness message.
RA-MG-5-2	Observation	Corrective actions associated with reportable occurrences as required by DOE Order 5000.3B, "Occurrence Reporting," are not timely.

The following deficiencies were identified by the RA team. However, YSORT findings had been previously written on these issues, and the RA team did not write duplicate findings:

YSORT 3004.01	Prestart and poststart findings and observations generated from the DOE and LMES assessments of RSS and depleted uranium operations (DUO) are not evaluated to determine their impact or significance towards D&A to ensure that the deficiencies are corrected or nonexistent within D&A.
YSORT 3004.02	The evidence files do not contain findings or deficiencies that were generated after May 2, 1995 to show their review by the Issues Management Prioritization Review Board in terms of their D&A applicability and their restart significance.
YSORT 3004.03	The conclusion that poststart RSS findings are poststart for D&A is not supported by conclusive evidence, and no indication is provided to show the process that was performed to provide this conclusion especially for deficiencies from RSS and DUO.
YSORT 3027.01	LMES does not meet resubmittal schedules for RFAs that are rejected by DOE.
YSORT 3028.01	Evidence indicating all compensatory measures applicable to D&A are effectively implemented is not available.
YSORT 3056.01	There is an operator aid program deficiency associated with radiological requirements for exiting the MAA in Building 9204-2E.
YSORT 6081.01	Radiologically controlled areas are established by unqualified personnel.

B. Operations (OP)

The assessment in this area was performed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant." Each organization identified in the POA as necessary to support D&A activities was assessed to determine whether:

1. The implementation status of DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," was adequate for resumption of operations. The scope of the assessment was limited to the following chapters of DOE Order 5480.19:

Chapter I.	Operations Organization and Administration
Chapter II.	Shift Routines and Operating Practices
Chapter V.	Control of On-the-Job Training
Chapter VI.	Investigation of Abnormal Events
Chapter VIII.	Control of Equipment and System Status
Chapter XIV.	Required Reading
Chapter XV.	Timely Orders to Operators
Chapter XVI.	Operating Procedures
Chapter XVII.	Operator Aid Postings

2. Personnel exhibited an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrated a high-priority commitment to comply with these requirements.

3. A routine operations drill program, including program records, had been established and implemented.

4. An adequate restart test program had been developed that included adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.

The review approach included document reviews, interviews, and observation of evolutions and drills. Emphasis was placed on observation of actual evolutions. Because of the status of the facility, C5 disassembly was performed on a mockup. Because no actual safety-significant system surveillances were scheduled during the assessment, the team requested and the facility performed surveillances on portions of the fire cycle system and criticality accident alarm system (CAAS). D&A and QO were assessed against the nine chapters of DOE Order 5480.19 listed above. Operator rounds were observed, required reading and narrative logs were reviewed, and control of operator aids was assessed. Evolutions were observed in both D&A and QO. The results of the operations review were documented daily on the Form 1s included in Appendix B. Specific deficiencies were documented on the Form 2s contained in Appendix C.

The manager, nuclear operations stated that the Nuclear Operations Conduct of Operations Manual was the guidance document to be used for performing operations in D&A. Workers at every level were to use the manual if they had an operational question. The Conduct of Operations Manual was written to apply to day shift operations, with the caveat that a second shift could be

established during periods of high demand. The Conduct of Operations Manual was present in D&A resumption areas, and organizational managers were aware of its contents. Compliance with conduct of operations requirements with regard to procedure quality and use, including CSAs, was at a lower level within the QO than in other D&A resumption areas.

During evolutions observed, supervisors and workers were knowledgeable and followed procedures. Supervisors' thorough pre-job briefs and effective direction during performance of evolutions were key elements in the successful completion of all evolutions requested by the assessment team. These evolutions were performed in a timely and professional manner. Generally, when problems occurred, either during the pre-job brief or the evolution itself, work was stopped until the situation had been corrected. The one exception involved fire protection personnel deviating from a quarterly fire cycle surveillance test to perform the test for the RA team (see RA-SE-1-3). Although the surveillance test was "modified" for demonstration purposes, management should have recognized the inability to perform the procedure as written and taken appropriate action.

As required, mentors were present during significant evolutions and were available throughout the assessment. Without exception, their advice and guidance were timely and correct. With appropriate supervisory and mentor involvement, operations were conducted with rigor and discipline.

Although some deficiencies in radiological controls practices were observed, the assessment concluded that awareness of and compliance with safety, health, and environmental protection requirements (including radiological controls) are satisfactory.

The team observed two drills, interviewed drill program managers and monitors, and reviewed program procedures and evidence files. At the time of this assessment, eight drill scenarios had been developed. The two drills observed by the team included a CSA violation and fire system inoperability. Pre-drill briefings, conduct of the drills, and post-drill critiques were performed according to procedure requirements, and the participants correctly performed required actions. Deficiencies observed by the RA team were usually noted by operations personnel during the critique. Overall problems with the drill program were also identified during the MSA and by YSORT, therefore no findings were issued.

The drill program is in its initial stages and should improve with time and experience. Management attention is needed to effect the necessary improvements and to emphasize its importance. Deficiencies noted during this assessment, the Management Self-Assessment (MSA), and YSORT activities should be factored into program improvements.

The team assessed the restart test program, including means to ensure that all equipment identified for restart is operable and that equipment not considered for restart is tagged out of service. In addition, the team reviewed maintenance records, including preventive and corrective maintenance, calibrations, and surveillances. The fact that a formal restart test program has not been developed was previously identified by the MSA and YSORT. This assessment focused on equipment operability and identification of nonrestart equipment.

The operability of all equipment necessary to support D&A resumption has not been adequately demonstrated. Corrective maintenance is required on numerous pieces of equipment and systems

to achieve operability. The Kathabar system is necessary to maintain strict temperature and humidity conditions in the MAA, yet is not included on the restart equipment list. The system is operable, but it has numerous outstanding maintenance job requests (MJR). In addition, not all equipment has been tagged out of service if not required for restart, as required by CO-28 in the POA (see RA-OP-5-1).

The overall conclusion in the operations area is that, after resolution of the prestart findings, adequate rigor and controls are in place to resume operations associated with C5 disassembly. The deficiency identified in the operations area is as follows:

RA-OP-5-1	Finding	The operability of all equipment necessary to support restart has not been adequately demonstrated. (Prestart)

The following deficiencies were identified by the RA team. However, YSORT findings had been previously written on these issues, and the RA team did not write duplicate findings:

YSORT 3011.01	Crane mounted vacuum pumps do not maintain required vacuum to ensure safety during list operations.
YSORT 3022.01	The drill program has not been effectively implemented.

C. Procedures

The assessment in the area of procedures was performed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant. The assessment was conducted to ensure there were adequate and correct procedures for operating systems and utility systems associated with D&A resumption activities. This review included the procedure development, revision, and use processes, as well as the document control program for procedures and CSAs.

The review approach included document reviews, interviews, and observation of evolutions and drills. The results of the procedures review were documented daily on the Form 1s included in Appendix B. Specific deficiencies were documented on the Form 2s contained in Appendix C.

Four different organizations are responsible for the procedures reviewed during this assessment; D&A, QO, the Y-12 Plant, and Product Engineering. These organizations are required to follow plant level procedures Y10-102, "Technical Procedure Process Control," and Y10-189, "Document Control," for procedures affecting D&A resumption. Plant procedure Y10-102 is the governing document for developing, modifying, revising, approving, and canceling technical procedures, whereas procedure Y10-189 specifies the procedure control process. Implementation of other governing documents such as procedures 60-WP-023, "Product Procedure," and Y10-135, "Command Media Development at the Y-12 Plant," was not reviewed as part of this assessment.

Deficiencies were identified with the implementation of both procedures Y10-102 and Y10-189. DSO was generally found to be in programmatic compliance with these procedures, and deficiencies were indicative of problems associated with continually changing requirements and

evolving cultural changes. Personnel were knowledgeable of program requirements and had records to support the revision and control process. Some problems were identified during evolutions, such as non-documented pen and ink changes to working copies, working copies not returned or verified within the appropriate period, and confusion resulting from two different procedure modification dates. These types of problems were previously identified during the MSA and by the YSORT, and therefore are not documented as findings by this team. One finding involved failure to meet a POA prerequisite, in that all procedures identified in the POA have not yet been revised, corrected, validated, and distributed (see RA-OP-1-1).

Deficiencies in QO procedures were more programmatic in nature. Interviews with QO personnel and observations revealed that a procedure control system, as required by procedure Y10-189, was not in place (see RA-OP-1-5). The operations procedure coordinator had distribution lists of manuals and receipt acknowledgments of transmitted procedures, but uniquely identified, stamped controlled copies of procedures were not maintained and the status of latest revisions to controlled copies could not be ascertained. Two QO CSAs contained vague, nonspecific wording that permitted operator latitude in interpreting requirements (see RA-OP-1-3).

The method for verifying the current revision of procedures differed for each organization. D&A verified the revision number through the computer database, VTX. Product procedures were verified through a secret database system with limited access. QO must verify the current procedure revision numbers verbally through the operations procedure coordinator.

Product procedures determined to be technical procedures by procedure 60-WP-023 are subject to the requirements of procedure Y10-102. Only one of the four product procedures required for restart was reviewed during this assessment (see RA-OP-1-1). The revisions to this procedure were made according to procedure Y10-102, and transmitted to the field using product engineering transmittals. Although this caused some confusion during the pre-brief for an evolution, the system did eventually work. However, immediate intent and non-intent changes cannot follow procedure Y10-102 because of the requirement for the product engineer to coordinate all changes with the cognizant design agency. This was not identified as a finding because only one procedure was available for review, and no examples of problems were encountered.

Plant procedures were not reviewed in detail as part of this.RA. However, a CAAS surveillance procedure did not include applicable Operational Safety Requirements (OSR) (see RA-OP-1-4). Deficiencies with the control and distribution of plant procedures similar to those that had been identified during the MSA and by YSORT were found during this assessment.

In summary, numerous problems were identified in the control and revision of procedures, including incorporation of CSA limits and OSR requirements. The procedure system is fragmented and in a continual state of change. The governing procedure, Y10-102, had five change directives as of May 1995, was extensively revised in September 1995, and was undergoing a major revision during this assessment, only four months later. The document control program, procedure Y10-189, generally provides adequate guidance for control of procedures. However, not all of the organizations supporting D&A resumption were complying with the requirements of this procedure. This assessment reviewed the procedure programs associated with D&A and QO, and to a lesser extent, plant and product engineering. The problems identified in D&A were not programmatic, and the corrective actions for the prestart findings should resolve

the deficiencies. The other organizations should consider more extensive corrective actions to achieve programmatic compliance and consistency with all affected site organizations.

The deficiencies identified in the procedures area are as follows;

RA-OP-1-1	Finding	Nineteen procedures in the POA had not been revised to meet requirements. (Prestart)
RA-OP-1-4	Finding	The CAAS surveillance procedure did not contain the applicable OSR requirements. (Prestart)
RA-OP-1-5	Finding	The control and issuance of procedures and procedure revisions by the QO are not in accordance with procedure Y10-189 requirements. (Prestart)

The following deficiencies were identified by the RA team. However, YSORT findings had been previously written on these issues, and the RA team did not write duplicate findings:

YSORT 3026.01	Method of controlling procedures for use in B2E has not been effective.
YSORT 3026.02	B2E is not using working copies of procedures as described in procedure Y10-189.
YSORT 3026.03	The plant procedures group is not marking distributed procedures as controlled copy.
YSORT 3026.04	The reading room in B2E should be treated as a document management center.
YSORT 3031.01	DSO procedures required for D&A activities should be upgraded to the new verification and validation standards.
YSORT 3031.02	The development and technical review stages of the procedure process need strengthening.
YSORT 3031.03	The process for incorporating CSA requirements into procedures needs to be formalized.
YSORT 3045.01	Procedures do not always include controls and limits significant to the nuclear criticality safety of the operation.
YSORT 3045.02	No objectives or criteria exist for NCSD to provide technical guidance in the development of operating procedures.

). Safety Envelope (SE)

The assessment in this area was performed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant." The assessment was conducted to verify that safety-significant systems and equipment were operational and in satisfactory condition, and that documents and control programs were technically correct and consistent with the safety requirements as defined in the OSRs and CSAs.

The review approach included document reviews, interviews, observation of evolutions and drills, and facility walkdowns. The results of the safety envelope review were documented daily on the Form 1s included in Appendix B. Specific deficiencies were documented on the Form 2s contained in Appendix C.

The one applicable OSR and sample CSAs were reviewed for technical accuracy and consistency with the physical configuration. The status of safety-significant system components in information control programs, such as the Recall-A (calibration) program, was evaluated for accuracy, completeness, retrievability, and consistency. Safety-significant system instruments that monitor OSR requirements were checked for current calibration and documentation. Procedures that govern surveillance testing and preventive maintenance were evaluated for effectiveness. The concluding objective was to determine whether the safety-significant systems identified in the POA were operational, in compliance with the OSR, and ready for resumption.

This assessment sampled five CSAs for review and verification. All five were field verified for technical accuracy and consistency with the physical configuration. A review of the engineering analysis for the sample CSAs confirmed that the technical requirements had been satisfactorily included in the respective CSA documentation. However, some information contained within the CSAs for implementation was found to be vague, misleading, or cumbersome. For example, conditions were allowed that forced the operator to rely on the CSA document or memory to accomplish tasks (see RA-OP-1-2). In other cases, implementation instructions were vague and could be reasonably interpreted in several different ways (see RA-OP-1-3).

Regarding the adequacy and correctness of safety limits for operating systems, the OSR was found to be technically accurate and consistent with the safety systems and components in the field. This was verified through field walkdowns of the CAAS and fire protection systems in Building 9204-2E.

Surveillances, inspections, and calibrations were performed on the appropriate equipment and at the correct frequencies due to improved methods for tracking and controlling these activities. Procedures that govern the inspection and calibration activities were up to date, consistent with the OSR, and properly documented. Problems with surveillance procedures included missing OSR requirements in a CAAS surveillance procedure, zone maps in a CAAS surveillance procedure that did not reflect the physical configuration (see RA-SE-1-1), and operations and fire protection personnel deviating from the requirements in a quarterly fire protection surveillance procedure (see RA-SE-1-3).

Preventive maintenance has not been performed on the fire protection equipment because these procedures have not been issued for use. Current completion dates for the issuance of these preventive maintenance procedures will not be met (see RA-SE-2-1).

Safety-significant equipment was found to be properly labelled, inspected, and calibrated, although some improvement is needed in the control of files and reports used for tracking status.

After completion of the reviews associated with this functional area and an evaluation of the programs in place, it was judged that once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly is warranted.

The deficiencies identified in the safety envelope area are as follows:

RA-OP-1-2	Finding	Some CSAs are not always accurate when describing the existing field configuration. They also force the operator to rely heavily on memory. (Prestart)
RA-OP-1-3	Finding	Some QO CSAs contained vague, non-specific wording, which permitted operator latitude in interpreting requirements. (Prestart)
RA-SE-1-3	Finding	Operations and fire protection personnel deviated from the surveillance test procedure requirements. (Prestart)
RA-SE-2-1	Finding	Fire protection preventive maintenance has not been conducted because the procedures are still under development. (Poststart)
RA-SE-1-1	Observation	Zone maps used by surveillance teams are not always accurate or optimally established.

The following deficiency was identified by the RA team. However, a YSORT finding had been previously written, and the RA team did not write a duplicate finding:

YSORT 3021.02	The current system configuration drawings for the B2 and B2E Fire Protection Systems are inadequate for operations perspectives. Full system piping and instrument diagrams (P&ID) and electrical drawings for the fire protection system need to be developed and issued.

E. Training and Qualification (TQ)

The assessment in this area was performed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant." The assessment was conducted to verify that training and qualification programs had been established, documented, and implemented, and there were adequate numbers of qualified/certified personnel to resume operations.

The review approach included document reviews, interviews, and observation of evolutions and drills, including classroom instruction. The results of the training review were documented daily on the Form 1s included in Appendix B. Specific deficiencies were documented on the Form 2s contained in Appendix C.

The assessment in the training and qualifications area assessed the training and qualification programs for D&A and QO and support functions identified in the POA. The review also addressed these programs to ensure that they were adequately established, documented, and implemented to cover the range of required duties. The assessment recognized the graded approach as described in the approved POA. Training, qualification, and level of knowledge were assessed by reviewing procedures, policies, and personnel training records; interviewing selected managers, supervisors, operators, and support personnel; administering a comprehensive written exam; and observing evolutions and drills.

The assessment in the level of knowledge area assessed the adequacy of the technical qualification of personnel responsible for facility operations; the level of knowledge of operations personnel based on reviews of examinations, exam results, selected interviews, and observation of work performance; and managerial qualifications of personnel responsible for facility operations.

The qualification standards for D&A and support organization positions defined the written, oral, and operational examinations required for qualification/certification for the applicable positions. Lesson plans were based on clearly defined enabling objectives. Written examinations and oral examination questions were based on the material presented in the lesson plans. As a general rule, examination questions were directly related to enabling objectives.

Training program plans, which describe the goals and objectives of the training and qualification programs, were in place but were still in draft form. On-the-job-training (OJT) and hands-on evaluation of skills were incorporated into approved training programs. Initial training programs were in place.

Training and qualification records were reviewed for selected D&A, QO, and support function operators, supervisors, and maintenance staff positions with a focus on the formality and completeness of training record management. It was determined that tabletop job task analyses (JTA) were used to establish training and qualification requirements. However, there were a number of training requirements that were omitted from the DSO qualification cards. Examples included operation of leak detectors and SAM-2 meters, preparation and application of adhesives, and packing of components for shipping (see RA-TQ-2-1). A review of personnel training records indicated that not all of the applicable QO personnel had the required evidence of qualification/certification in their training records (see RA-TQ-1-1). Additionally, many problems were found in the administration, grading, and recording of examinations that lead to certification in QO. In one example, the comprehensive examination for a metallurgist was not properly graded, resulting in a satisfactory grade for unsatisfactory performance (see RA-TQ-1-2 and RA-TQ-4-1). Satisfactory completion of a comprehensive examination is a prerequisite for certification. Corrective actions by the QO management were incomplete. While the metallurgist was removed from work activities, certification documents remained in place.

Procedures and training infrastructure were reviewed. The qualification/certification process is clearly defined and found to be adequate for D&A. A review of the QO qualification/ certification process revealed that procedures that define proficiency requirements have not been established (see RA-TQ-1-3). Additionally, QO has not established and implemented a continuing training program (see RA-TQ-3-2). The Facilities Maintenance Organization (FMO) has not established controls that ensure only qualified personnel perform activities requiring qualification (see RA-TQ-2-2).

As part of the RA, a comprehensive written examination was given to selected D&A personnel. Specific areas of examination included technical competency, safety and health issues, and conduct of operations. As a general rule, level of knowledge was adequate in all areas. There was, however, some weakness in the area of conduct of operations. The interviews that were conducted indicated a good level of knowledge of the safety culture in D&A. However, QO demonstrated weaknesses in knowledge of compensatory measures and conduct of operations.

Training and qualification/certification is achieved through the use of the systematic approach to training. This is a five step process which includes the analysis, design, development, implementation, and evaluation phases of training. Analysis determines specific training requirements needed for qualification. Typically, these include requirements for fundamental and integrated system training. The training and qualification programs for D&A and QO consist almost entirely of health and safety compliance-based training and procedure-based training (see RA-TQ-2-3). Without fundamental and integrated system training, the trainees may not be fully knowledgeable of procedural requirements, purpose, and response to unexpected or abnormal situations.

Overall, D&A personnel demonstrate an adequate understanding and implementation of the qualification/certification process. D&A management is involved in the process and is knowledgeable of the applicable training requirements. After completion of the reviews associated with this functional area and an evaluation of the programs in place, it was judged that once pre-start findings associated with this area are resolved, resumption of operations associated with C5 disassembly is warranted.

A significant number of training and qualification issues were identified in QO during this RA. These issues individually do constitute a serious concern. However, the breadth and depth of these issues taken as a whole are indicative of an inadequate understanding within the organization of the qualification/certification process. As a result, considerable additional effort will be required to support resumption activities.

The following deficiencies were identified by the RA team:

RA-TQ-1-1	Finding	Not all QO personnel requiring qualification/certification have evidence of qualification/certification in their personnel training records. (Prestart)
RA-TQ-1-2	Finding	The comprehensive examination for a QO metallurgist was not properly graded and this resulted in a failing score. The metallurgist should be considered for decertification. (Prestart)

RA-TQ-1-3	Finding	Procedures in QO were not established to define required activities and their frequency to maintain an active status as a certified fissile material handler. (Prestart)
RA-TQ-2-1	Finding	Assemblyperson dismantlement position qualification requirements did not include training identified by the operating organization as being required for qualification/certification. (Prestart)
RA-TQ-2-2	Finding	FMO has not sufficiently established controls that ensure only qualified/certified personnel perform activities requiring qualification/certification. (Prestart)
RA-TQ-2-3	Observation	The training programs for D&A and QO do not contain fundamental and systems training.
RA-TQ-3-1	Observation	Continuing training dates are not accurately and consistently identified.
RA-TQ-3-2	Finding	The QO has not established and implemented a continuing training program. (Poststart)
RA-TQ-4-1	Finding	Problems were found in the administration, grading, and recording of examinations that lead to qualification/certification in the QO. (Prestart)

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III. LESSONS LEARNED

- The RA team training process should include basic writing and format criteria to help reduce the number of non-content revisions. Some examples of problems team members experienced are as follows:

  - Writing conventions (e.g., use only past tense verbs, do not itemize conclusions) were a source of frequent changes.

  - The required formats for some forms/sections (such as closure criteria) were not always clear. This was not a major problem, since most format requirements were conveyed to the team using examples. However, many examples differed from the final ones chosen.

- Problems with training and facility access for RA team members can be significant and require early resolution. The following could alleviate some of the problems encountered:

  - Training necessary for unescorted facility access must be determined and scheduled as early as possible. The facility to be assessed must provide an accurate list of required training modules.

  - Most, if not all, training will need to be conducted outside of published training class schedules. Points of contact are different for each type of training (e.g., Radiological Worker II, Nuclear Criticality Safety, and General Employee Training). The RA team leader needs to designate one individual, located in the area where the assessment will take place, to schedule and coordinate training and facility access.

  - All RA team members should have LMES badges. One RA team member who did not have an LMES badge was not afforded unescorted access, even though he met all training requirements for the facility.

- The use of daily updates on status of CRAD requirements needs to be done through discussions with the team manager and the area leads to maintain the status log (CRAD TRACKER) in a meaningful manner. This causes the area leads to maintain control of all requirements, not just those the lead has assigned himself. The daily update of Form 1s and the CRAD TRACKER is useful to keep track of progress and refocus on the specific requirements of the CRADs.

- Many of the observations conducted are in support of operations and, as such, assignments of other team members to support observations and walk downs needs to be coordinated. At least the area leads should be involved to ensure that CRAD requirements necessary to support completion of functional area requirements can be considered and that necessary operations are scheduled to meet observations outlined in the CRADs.

- CRADs that involve input from several members of the assessment team (e.g., safety culture for the D&A assessment) should be in all team members' work plans and updated daily (basically a daily debriefing).

- Where mockups are used to demonstrate capabilities, as many simulations and other artificialities as possible should be removed. For example, if actual work would be performed in a respirator area, the area with all attendant restrictions should be established and enforced. If a crane would be required to move actual parts due to their weight, the crane should be used to transport mockup parts, even though they are much lighter in weight than the actual parts.

IV. ACRONYMS

CAAS	Criticality Accident Alarm System
CRAD	Criteria and Review Approach Document
CSA	Criticality Safety Approval
D&A	Disassembly/Assembly
DNFSB	Defense Nuclear Facility Safety Board
DOE	Department of Energy
DU	Depleted Uranium
DUO	Depleted Uranium Operations
ESAMS	Energy Systems Action Management System
EU	Enriched Uranium
FMO	Facilities Maintenance Organization
JTA	Job Task Analysis
LMES	Lockheed Martin Energy Systems, Inc.
MAA	Material Access Area
MJR	Maintenance Job Request
MSA	Management Self Assessment
NCSD	Nuclear Criticality Safety Department
OJT	On-The-Job Training
ORO	Oak Ridge Operations
ORR	Operational Readiness Review
OSR	Operational Safety Requirements
&ID	Piping and Instrument Diagram
POA	Plan of Action
QO	Quality Organization
RA	Readiness Assessment
RFA	Request for Approval
SE	Safety Envelope
YSORT	Y-12 Site Office Restart Team

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APPENDIX A

Copy of Y/OA-6245

Lockheed Martin Energy Systems, Inc.
Readiness Assessment Implementation Plan
for the
Resumption of
Disassembly/Assembly Activities
at the
Oak Ridge Y-12 Plant

January 5, 1995

Y/OA-6245

Lockheed Martin Energy Systems, Inc.
Readiness Assessment
Implementation Plan
for the
Resumption of
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APPROVED: J P Flynn 1/5/96

J. P. Flynn, RA Team Manager

January 5, 1996

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I. INTRODUCTION

A. General

This implementation plan has been prepared to comply with the requirements of Department of Energy (DOE) Order 5480.31, "Startup and Restart of Nuclear Facilities," and DOE-STD-3006-93, "Planning and Conduct of Operational Readiness Review (ORR)." The scope of the Readiness Assessment (RA) is described in the Plan of Action (POA), Y/OA-6238, Revision 1, which was prepared by Y-12 line management and approved by the Department of Energy, Oak Ridge Operations Office, on June 16, 1995.

The Manager, Oak Ridge Operations Office, is the designated restart authority.

This implementation plan contains the overall assessment procedure, and its appendices include the Criteria and Review Approach Documents (CRAD), which defines the review objectives and criteria as well as the approach for assessing each objective. Results will be provided in a report that is discussed in section IX of this implementation plan.

Operations at the Y-12 Plant were suspended as a result of a review of Building 9204-2E containerized storage operations and applicable Criticality Safety Analyses (CSA) on September 22, 1994. The review found violations of administrative safety controls associated with material storage arrays. Operations personnel, upon discovery of the criticality safety violation, did not immediately administratively control the area; i.e., assure personnel were kept at a safe distance from the array. They also did not immediately notify the Nuclear Criticality Safety Department (NCSD) or the Plant Shift Superintendent. This was a violation of Energy Systems training and procedures. Following the event, all CSAs were walked down and seven categories of criticality safety nonconformances were identified with a total of 1,344 individual observations.

Examination of the data from the evaluation of the CSA walkdowns, the occurrence report covering the initial infraction, the Type "C" Investigation, and the Defense Nuclear Facility Safety Board (DNFSB) Recommendation 9404 indicate the basic cause to be a lack of rigor in Conduct of Operations that permitted less than strict compliance with procedures. The issue was not one of operations being outside the safety envelop--the primary safety controls remained intact. Rather, the issue was the need to improve organizational performance and greater assurance in the safety management process of daily operations. Within the umbrella of conduct of operations, the principal failure was the result of personnel not following procedures with the rigor required. Contributing was the lack of training on CSAs in particular.

B. Y-12 Plant

The Y-12 Plant is one of two installations in Oak Ridge, Tennessee, managed by Lockheed Martin Energy Systems, Inc. (Energy Systems) for the DOE. Energy Systems also manages the Oak Ridge K-25 Site. For four decades the Oak Ridge Y-12 Plant has been the national center for the handling, processing, storage, and disassembly of all DOE-controlled enriched uranium (EU) materials and components as well as depleted uranium (DU) and other special materials components.

The DOE Defense Programs at the Y-12 Plant include the dismantling of nuclear weapons components returned from the national arsenal, serving as the nation's storehouse for special nuclear materials, maintaining nuclear weapons components production capability and stockpile support, and providing special production support for other DOE programs and customers. In addition, as the primary EU repository for the United States, the Y-12 Plant has the facilities and security systems for EU storage, chemical recovery, and material purification and fabrication.

Resumption activities for the Y-12 Plant are divided into mission areas that are defined by programmatic mission descriptions and needs. This Implementation Plan (IP) addresses the scope of the resumption of disassembly/assembly activities, which is one of the mission areas for the Y-12 Plant.

C. Disassembly Activities

Disassembly activities in Building 9204-2E are presently limited to manual techniques and a single-lathe operation. These activities were in progress prior to the September 22, 1994, stand down. Disassembly begins with receipt of the unit from the storage area (storage activities were assessed for readiness as part of the *Martin Marietta Energy Systems, Inc., Readiness Assessment Plan of Action for the Receipt, Storage, and Shipment of Special Nuclear Materials as the Oak Ridge Y-12 Plant*, Documents Y/OA-6233 and Y/OA-6234). Upon receipt of the units on the second floor of Building 9204-2E, they are transferred by forklift truck to the "tear-down" area. The "tear-down" area is a portion of the Material Access Area (MAA) on the second floor. The unit is then removed from its container and placed on a disassembly work table using an overhead crane and program-specific lifting device. The disassembly work table is then positioned in a recirculating walk-in hood. Disassembly of the unit is then performed using manual hand tools (hammers, chisels, pry bars) and pneumatic devices (chipping hammers, chisels, wrenches). A small Hardinge lathe is used for disassembly activities outside the walk-in hood. As the parts are removed, they are identified, verified, weighted, and segregated for further disassembly operations or transferred out of the area. Segregated parts are then transferred to the materials management area for final disposition to recovery processing areas (recovery processing will not be included in the scope of the Implementation Plan.

D. Assembly Activities

Assembly activities in Building 9204-2E include all aspects of assembly processing, from component precleaning to packaging. All assembly processes were approved for operation prior to the September 22, 1994, stand down, although specific programmatic operations may not have been ongoing at that time.

Assembly processing begins with receipt of the components from the storage area. Upon receipt of the components, they are transferred to the "cleaning" area. Prior to beginning cleaning operations, all components are verified for certification and material identification. Cleaning operations are performed by hand-wiping components with solvent. Additional surface preparation may be completed by electropolishing components in a charged solution or power brushing with a stainless steel brush. Cleaned components are wrapped in Kraft paper for protection and placed back in their respective containers for movement to the second floor assembly area.

Examples of other pretreatment activities include containerizing and baking of components, adhesive coating, and electrical testing. After component cleaning or pretreatment, the components are moved to the assembly work station required for the next operation. These work stations and work areas include environmentally enhanced rooms; assembly stands; surface plates; electron-beam, laser, gas tungsten arc, gas metal arc, and spot welders; bond stands, vacuum furnaces, machining stations, lathes, and leak-test stations. The assembly process may require several assembly steps with repeated use of some of the work stations or work areas. Interfaces with Quality Organization personnel may also occur several times during the assembly process to facilitate verification of product acceptance criteria. These interfaces may be with radiography, dye penetrant ultrasonics, or dimensional inspection personnel as required by the specific process or program. Upon completion of assembly operations, the component is packaged in a container approved for off-site shipment.

E. Materials Testing Laboratory

Materials testing operations under this resumption plan are limited to Room 311 in Building 9204-2E. Materials testing begins with the receipt of small samples of metallographic or mechanical properties evaluation.

Upon receipt of metallography samples, they are mounted in epoxy molds and, after hardening, are ground and polished to a flat, smooth surface. Samples are then moved to photographic stations for microscopic evaluation and photographic documentation. Additional steps to etch or anodize the surface using nitric acid and ammonium hydroxide, respectively, may be required prior to photographing.

Upon receipt of mechanical properties test samples, they are tested on standard industrial-type mechanical test equipment, usually to failure, to produce the required mechanical properties data.

II. PURPOSE

This Readiness Assessment will determine if Y-12 is ready to resume the disassembly/assembly activities that were shut down as a result of events on September 22, 1994. The Readiness Assessment will be conducted in accordance with this implementation plan.

III. SCOPE

A. Breadth of the Readiness Assessment

1. Basis for RA Breadth

The approved POA addresses each of the 20 core requirements of DOE Order 5480.31. The 20 core requirements (CR) were further subdivided by the POA into 36 core objectives (CO) to aid applicability determination as described in DOE's June 2, 1994 change request, *Revision of DOE 5480.31*, proposed by the director of the Nuclear Operations and Analysis Division, EH-63. DOE OR concurrence in the use of the 36 core objectives was granted on November 10, 1994. In

November 1995, DOE STD-3006, Planning and Conduct of Operational Readiness Reviews (ORR), was revised to include the 36 COs.

a. Causal Factors of the Precipitating Event

The breadth of the RA is defined by a correlation between the COs and the causal factors and the issues associated with the September 22, 1994 incident. The causal factors were derived from Y/AD-622, "Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994." The following were identified as causal factors:

- Management had not ensured that some Nuclear Criticality Safety (NCS) deficiencies and their root causes were always identified and corrected in a timely manner.
- Shortcomings existed in verbal and written communications regarding some CSAs.
- Inadequate attention to detail and rigor existed in some areas of the conduct of operations at Building 9204-2E in VTR-2 and VTR-3.
- Roles and responsibilities for some positions had not always been clearly understood and implemented.

b. Additional Core Issues

The following two additional issues have been included to address root causes of the precipitating event and further specifically address DNFSB recommendation 94-4:

- Personnel knowledge and experience (technical, procedural, and safety cultural) may not be sufficient to uniformly support continued safe operations per DNFSB recommendations 93-1, 93-6, and 94-4(3);
- A comprehensive review of the nuclear criticality safety program at the Y-12 Plant is necessary to assure effective performance.

c. Focus of Restart Preparations and Readiness Assessment

The focus of the restart preparations is on correcting the causal factors and additional core issues described above. These factors and issues are centered largely on the rigor and formality of the operations performed.

The focus of this assessment is on personnel and training since the causal factors and issues were primarily associated with conduct of operations errors. The COs are used to verify the readiness of personnel, training, systems, equipment, facilities, procedures, and administrative systems. The RA also includes those areas where deterioration of capability may have occurred during the period of shutdown, such as operator level of knowledge.

2. List of Core Objectives

The scope of the RA as defined in the approved POA includes the following Core Objectives. The POA includes additional discussion concerning the scope or focus intended for each CO. The individual CRADs have incorporated this additional specificity. Some core objectives of DOE Order 5480.31 are excluded from the Readiness Assessment scope. The discussion and justification for the exclusion decisions is in the DOE-approved POA.

CO-4. There are adequate and correct safety limits for operating systems. (CR-1)

CO-7. There are adequate and correct procedures for operating systems and utility systems. (CR-1)

CO-10. A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, safety-related process systems, and safety-related utility systems. (CR-5)

CO-11. Safety system and other instruments which monitor Technical Safety Requirements (OSRs at Y-12) are monitored for calibration. (CR-5)

CO-12. All safety and safety-related utility systems are currently operational and in a satisfactory condition. (CR-5)

CO-13. Training and Qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)

CO-14. Technical qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)

CO-16. Training has been performed to the latest revision of procedures. (CR-18)

CO-17. Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance. (CR-3)

CO-18. There are sufficient numbers of qualified personnel to support safe operations. (CR-13)

CO-19. The implementation status for DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities," is adequate for operations. (CR-12)

Chapter I. Operations Organization and Administration

Chapter II. Shift Routines and Operating Practices

Chapter V. Control of On-the-Job Training

Chapter VI. Investigation of Abnormal Events

Chapter VIII. Control of Equipment and System Status

Chapter XIV. Required Reading

Chapter XV. Timely Orders to Operators

Chapter XVI. Operating Procedures

Chapter XVII. Operator Aid Postings

CO-20. Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements. (CR-14)

CO-22 A routine operations drill program, including program records, has been established and implemented. (CR-9)

CO-23. Managerial qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)

CO-24. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety. (CR-11)

CO-25. A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. (CR-6)

CO-27. Noncónformances to applicable DOE Orders have been identified, and schedules for gaining compliance have been justified in writing and formally approved. (CR-7)

CO-28. An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators. (CR-10)

CO-29. A program is established to promote a site-wide safety culture. (CR-14)

B. Basis for Readiness Assessment Depth

Depth refers to the level of analysis, documentation, or action by which a particular CO is assessed. Variations in the depth are obtained by the number of criteria that are used to assess a given CO or by the intensity of the review approaches. The review approaches include documentation checks, interviews, and walkdowns. Increased depth is attained by applying more of the review approaches for a given criteria or objective. The depth to which the different COs are assessed varies, depending on the particular facility characteristics (e.g., category 2 versus

category 3 facilities) and according to the degree to which the requirement contributed to the incident on September 22, 1994. The graded approach, as described in Appendix 1 of DOE-STD-3006-93, is used to assist the team members in determining the appropriate assessment depth.

IV. READINESS ASSESSMENT PREREQUISITES (PR)

Several PRs have been identified that must be complete before beginning the Energy Systems RA. These PRs consist of management plans and reviews necessary to ensure line management readiness to proceed and implementation of revised operational safety requirements (OSR) necessary for safe operations. Specifically, the PRs are as follows:

PR-1. All procedures, CSAs, and OSRs identified as required for operation within the next 12 months has been reviewed, corrected, validated, and the most recent revisions are present in the workplace, as required. All identified procedures have been categorized and are adequately controlled. Procedures required for operations beyond the first 12 months are designated as Phase III and a schedule for their completion has been submitted to management. (COs-7, -4)

PR-2. All applicable safety and safety related operational and utility systems have been identified. All required calibration, surveillance testing, and preventative maintenance actions are completed and up to date. All systems are operational based on system walkdown. (COs-10, -11, -12)

PR-3. Operators, supervisors, and operational support personnel are identified, trained and qualified in accordance with the Y-12 Plant TIM milestones. Training and qualifications records reflect satisfactory completion of the requirements by a sufficient number of personnel to resume safe operations. (COs-13, -14, -18)

PR-4. Identified operations and support personnel have completed required training on the latest version of each procedure identified as required for operations within the first 12 months of resumed operations. Personnel understand the procedure compliance policy and their responsibilities. A viable system for the control of the issuance and use of procedure revision by the field and by the training organization is in place. (CO-16)

PR-5. Operation and operational support personnel levels of knowledge are validated and documented as satisfactory. The level of knowledge is validated through the following techniques: examinations, observation of procedure walkthroughs, and/or performance of operational drills or interviews, as appropriate. (COs-17, -22)

PR-6. The status of the Conduct of Operations implementation program is in accordance with the submitted plant and facility-level Requests for Approval (RFAs). (CO-19)

PR-7. The safety culture is established and verified to be adequate. Safety-related policy statements and program procedures are in place. Personnel have received an indoctrination on the programs and policies and exhibit awareness of requirements for safety operations. (COs-20, -29)

PR-8. A routine operations drill program is documented in guides developed for the program. The specified number of operating and support personnel required for the scenario must be present, trained, and qualified during drills and simulations. Operations and operational support personnel demonstrate a satisfactory level of proficiency in response to routine operations drill scenarios. The routine operations drill program records are current and reflect an adequate program status. (CO-22)

PR-9. Managerial qualification and awareness of functions, assignments, responsibilities, and reporting relationships are satisfactory. The managerial qualification requirements are defined in Energy Systems policy statements, position descriptions, and performance appraisal criteria. (COs-23, -24)

PR-10. Operations managers have reevaluated the results of internal and external assessments performed since October 1993 on their operations and facilities identified in this RA to determine if the corrective actions were appropriate. Operations managers have reviewed ESAMS status for their facilities. All CSA infractions are corrected. Any overdue items are approved to remain open. A record of the evaluation is completed and available. (CO-25)

Operations managers review all compensatory and corrective actions identified by the Y-12 Plant programmatic and facility programmatic and adherence-based compliance assessment of the 51 DOE orders of interest to the DNFSB. The actions described in the RFAs are adequately addressed for their facilities/activities. Corrective actions implemented prior to certification of readiness to proceed. (CO-27)

PR-11. All applicable systems and components within the scope of the RA necessary for the processes being restarted are identified. All required maintenance, preventative maintenance, calibrations, and surveillances are current. The start-up test program and system walkdowns verified readiness of the systems and components to support resumption of operations. (CO-28 and DOE Concern)

PR-12. Documentation of compensatory measures is complete and available. Compensatory measures implemented when CSAs are used as procedures are documented. Operations supervisors and personnel understand the compensatory measures and when they are required for operations. The conditions for the removal of compensatory measures are documented and understood by operations supervisory personnel. A program for the periodic management assessment of the continued need and adequacy of compensatory measures is in place and documentation of these assessments is complete and available. (DOE Concern)

PR-13. The use of mentors as compensatory measures for Conduct of Operations requirements is documented. Qualifications, experience, and responsibilities for mentors have been established, mentors have been selected, and mentors have been assigned to specific facilities. Performance objectives have been established which define the minimum performance of line personnel prior to mentor removal. (DOE Concern)

PR-14. A management self-assessment (MSA) is completed and verifies readiness to resume operations. The MSA verified the satisfactory status of the above prerequisite conditions,

including those for support programs. The MSA verified the completion of the resumption project plan. The MSA verified the satisfactory condition of the facility and support organizations against the RA Criteria and Review Approaches or the RA COs. the MSA verified completion of commitments in the approved restart plan, Y/AD 623, *Plan for Continuing and Resuming Operations*, which are applicable to the facilities and processes being restarted. (All COs, and DOE Concerns)

PR-15. Line management for all facilities and processes within the scope of this RA certifies in writing that readiness to resume operations has been achieved. [DOE Order 5480.31, section 9.b.(2)]

V. OVERALL APPROACH

The RA will provide Energy Systems senior management with independent, objective measurement of the readiness to resume disassembly/assembly activities at Y-12. It will also be an indicator that Y-12 has a management team with a satisfactory level of proficiency to resume these activities. The following paragraphs outline the sequence of the readiness assessment.

A. Y-12 Line Management Readiness-to-Proceed Certification

Upon completion of the Y-12 management self assessment (MSA), including resolution of all pre-start findings (with the exception of a manageable list of open pre-start findings that have a well defined schedule for closure) the Y-12 Restart Manager will issue a readiness to resume operations certification discussed in prerequisite PR-5. The Energy Systems RA will not begin until the Restart Manager has provided his certification of readiness, and direction has been received from the Vice President, Defense and Manufacturing to start the Readiness Assessment.

B. Readiness Assessment

The RA team members will review documentation and procedures; inspect equipment, systems and buildings; interview personnel; and observe simulated or actual operations as they are performed. The reviews conducted by each RA team member will be guided by a set of Criteria, Review, and Approach Documents (CRAD) included as Appendix 2. The review approaches include record reviews, interviews, and review of operational performance. The level of knowledge interviews will determine the awareness of fundamentals and the retention of material included in the training program. For a specific operation, the team members will review the records and procedures, observe the operation, witness the execution of the procedure and the generation of the records, and then follow up on pertinent issues with interviews. For example, if a mistake is noted during an evaluation, operators with similar qualifications may be questioned concerning their response to a similar situation.

The RA will place emphasis on reviewing samples of results or observing performance for adequacy. It will place less emphasis on systematic review of program structure and organization. However, if any portion of the review indicates a weak program, then further analysis of that program may be required. It must be noted that activities in disassembly/assembly are limited. Therefore, where "Shift Performance" is indicated in the CRADs, it will be monitored only if there are activities in process, or if activities can reasonably be simulated.

The RA is conducted in two phases, the first being a review of documents associated with the implementation of prescribed programs, for example, corrective actions following the September 22 event, revised procedures, radiological controls procedures implementation, and completed surveillances. These reviews will be evaluated against DOE and facility requirements. The second phase stresses preparation for operations, to permit evaluation of the operational proficiency developed in preparation for resumption of disassembly/assembly activities. This phase evaluates operators' and selected support personnel's level of knowledge. Emphasis is placed on any areas of concern identified during operations to determine if problems noted are of a general nature or unique to an individual. This manner of review allows the RA team to build a focused picture of the readiness to resume disassembly/assembly activities.

The Team Manager, in consultation with the applicable team member, has the responsibility for making the determination of whether a finding is pre-start or post-start. The criteria to be used in this determination are given in Appendix 3. The results of this determination are documented on a Deficiency Form (Form 2).

At the completion of the RA, a report will be prepared summarizing the review and commenting upon the readiness of Y-12 disassembly/assembly to restart. The Team Manager and team members will sign the final report and transmit it to senior Energy Systems managers. Dissenting opinions will also be forwarded as part of the final report.

Energy Systems and Y-12 management will be responsible for making corrective action plans in accordance with the requirements of Energy Systems procedure QA-16.1, "Corrective Action Program," and for closing all findings in accordance with QA-16.1. The Responsible Manager as defined in QA-16.1 will prepare evidence files for each finding submitted for closure. Assistance in the development of corrective action plans or interpretation of individual findings may be requested from the Team Manager or applicable team members.

The RA Team Manager must concur with the closure of all pre-start findings.

C. Assessment Results Briefings

The team will provide briefings on the conduct and results of the RA to Y-12 management and, upon request, to senior Energy Systems or DOE management for their information and to help them form their decision regarding start-up.

VI. RA TEAM PREPARATIONS

Prior to commencement of on-site RA activities, training and familiarization for RA team members will be conducted. It will consist of site and facility familiarization, necessary radiological and safety training for facility access, facility program status, and development of the RA Implementation Plan and associated CRADs. Each team member has assessment experience or appropriate training. No team member has any connection with disassembly/assembly activities that impact his independence to review assigned functional areas. By their selection, the Team Manager certifies that each team member is technically competent, has appropriate assessment experience, is independent, and will become familiar with the facility through the familiarization process described above. Summaries of experience are contained in Appendix 1.

VII. ENERGY SYSTEMS RA PROCESS

The Team Manager, assisted by team members, has developed the CRADs for this review. These CRADs provide defined bases for conducting the RA within the scope set forth by the core requirements and derived core objectives of DOE Order 5480.31. The Team Manager will review the efforts of the team members to ensure that all objectives are thoroughly assessed. The CRADs are based on the combined expertise of the team members, DOE Orders, and other requirements, the potential hazards of operations, and the findings of internal and external review groups.

VIII. ADMINISTRATION

The team will meet daily during the on-site review. These meetings will permit the team members to discuss significant observations or problems identified during the day and will permit the Team Manager to identify any trends or areas where more detailed information may be required. It will also allow potential schedule difficulties or possible information gaps to be identified in time to take corrective action.

Responsibility for the quality of the review process rests with the Team Manager and includes selection of all Energy Systems RA team members and daily on-site review of the findings of the team members.

IX. REPORTING AND RESOLUTIONS

A. Forms

During the conduct of the RA, documentation of findings and observations and the assembly of objective evidence of operational readiness will be the responsibility of the individual team members in accordance with specific directions given below. Two types of administrative forms will be used to accurately document on-site inspection activities, findings, and observations.

The Assessment Form (Form 1) is used to document the methods and actions by a team member taken in their criteria evaluation process. Each Form 1 covers a specific sub-objective and lists the means the team member has used to measure the site's performance relative to the objective provided in the CRADs. The form will be complete enough to allow an outside agency reviewing the form to follow the assessment logic and means utilized to verify the site's performance with respect to the objective and to thereby validate the RA's completeness and adequacy. The write-up will clearly describe the approach taken to review the criterion. If for some reason the approach used does not exactly match the approach described in the CRAD, the reason will be documented. The conclusion will specify if the criteria for the particular objective have been met.

The Deficiency Form (Form 2) is used to document the issues revealed during the criteria evaluation process. A separate Form 2 should be generated for each issue related to a particular objective. For instance, in reviewing a CRAD, or portion of a CRAD, a team member will generate a single Form 1 that describes the methods utilized in the investigation. If one distinct issue is discovered, the team member would then generate one Deficiency Form to detail the deficiency. A single Deficiency Form may be used to identify a generic problem for which a number of individual examples are listed. Clear communication is the objective, and the specific number of Deficiency Forms used to detail issues will necessarily be up

to the discretion of the team member and Team Manager. Sample Forms 1 and 2 are located in Appendix 4.

B. Finding Classification

A single issue or a group of related issues that have been documented on Deficiency Forms may constitute a finding. The Team Manager, in consultation with the team member(s), has the responsibility for making the determination of whether a finding is pre-start or post-start. Appendix 3 provides the criteria to be used to aid in this determination. The results of this determination are documented on the Deficiency Form.

C. Lessons Learned

The Team Manager will report any problems or successes specific to the conduct of this RA as Lessons Learned to aid future RAs and will incorporate them into the final report. These will include lessons learned with respect to the RA process itself, technical issues relating to the safe operation of DOE facilities, and interfaces with DOE in the RA process.

D. Final Report

The Team Manager will develop a report to document the results of the RA. The report will identify findings and observations found in the review and will identify findings as pre- or post-start.

Team members will be asked to sign the disassembly/assembly report, showing they concur with the disassembly/assembly RA final report in the areas of their expertise. Dissenting opinions that have not been resolved will be appropriately addressed in the report. The Energy Systems RA report will be transmitted by the Team Manager to the Energy Systems Vice President, Defense and Manufacturing.

The RA report will be written with this format as a guide:

TITLE PAGE - The title page is the report cover and will state the subject and dates of the RA.

SIGNATURE PAGE - This page will be for the signature of all RA team members and will be used by the team manager in the final version of the report.

TABLE OF CONTENTS - The table of contents will identify all sections and subsections of the report, illustrations, tables, charts, figures, and appendices.

EXECUTIVE SUMMARY - This is a brief summary of the review process, the major or pre-start findings, and the readiness determination with appropriate recommendation.

INTRODUCTION - The introduction will provide information regarding the facility reviewed, the reason for the shutdown, and the purpose and the scope of the RA. It will also contain a brief discussion of the overall objectives of the RA, the review process, and team composition.

RA EVALUATION - For each functional area, the report will discuss the objectives, the pre-start and post-start findings of that area, and provide conclusions as to readiness to commence operations.

LESSONS LEARNED - Problems or successes encountered during the review that could be applied to future RAs, or to the construction, design or decommissioning of DOE facilities will be identified and documented in the report.

APPENDICES - Appropriate data will be provided as appendices to support the conclusions drawn in the report. These will include:

a. Implementation Plan
b. Team List and Qualification Summaries
c. Criteria and Review Approach Documents (CRAD)
d. Assessment Forms (Form 1)
e. Deficiency Forms (Form 2)
f. Dissenting Opinions (if applicable)

X. SCHEDULE

The Y-12 disassembly/assembly Energy Systems RA is expected to commence approximately one week after line management certification of readiness and endorsement by the Vice President, Defense and Manufacturing. The Energy Systems RA will require about two weeks to complete. The Energy Systems RA team training and familiarization may occur prior to Energy Systems issuance of the line management certification of readiness.

APPENDICES

Appendix 1: Team Member Summaries of Qualification
Appendix 2: Criteria and Review Approach Documents
Appendix 3: Finding Classification Criteria
Appendix 4: RA Assessment and Deficiency Forms

TEAM LIST

NAME	AREA(s)
Joe Flynn	Team Manager
*Ron Shaffer	Management
**Jay Hummer	Management
*Ollie Oliver	Operations/Procedures/Safety Envelope
Ed Lee	Operations/Procedures
Bruce Wilson	Operations/Procedures
*Norman Ford	Training/Qualification
Ron McConathy	Training/Qualification
George Zagursky	Safety Envelope

*Lead evaluator for assigned area(s)
**Corporate representative

APPENDIX 1

TEAM MEMBER SUMMARIES OF QUALIFICATION

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Joseph P. Flynn

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

READINESS ASSESSMENT TEAM MANAGER

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Electrical Engineering, Purdue University Honors Program
- U.S. Navy Nuclear Power Program - six years
- Commercial Nuclear Plant Experience
  - Engineering
  - Maintenance Manager
  - Senior Reactor Operator
  - Operations Manager
  - Technical Manager
  - Assistant Plant Manager
- Institute of Nuclear Power Operations (INPO)
  - Maintenance Department Assistant Manager
  - Operations Department Manager
    - Developed "Guidelines for the Conduct of Operations at Nuclear Power Stations"
  - Events Analysis Department Manager
  - Technical Development Department Manager
  - Plant and Corporate Evaluation Team Manager - more than 20 evaluations
- Consultant in areas of Operations and Maintenance
- Manager of LMES Evaluations Program

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- See INPO experience.
- Participated in 13 LMES Evaluations Group evaluations as a consultant to the team manager.
- Led LMES RA for Depleted Uranium Operations
- Completed Management Oversight and Risk Tree (MORT) training (1985)

SUMMARY OF FACILITY FAMILIARIZATION:

Participated in one LMES Evaluations Group evaluation of Y-12.

BASIS FOR ACCEPTABLE INDEPENDENCE:

The Manager, Evaluations Program reports to the Vice President, Compliance, Evaluations, and Policy.

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Norman T. Ford

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

TRAINING AND QUALIFICATION (TQ): Core Objectives 13, 14, 16, 17, 18

SUMMARY OF TECHNICAL QUALIFICATIONS:

- Currently pursuing BS in Engineering at the University of Tennessee
- U.S. Navy Nuclear Power Program, served as Leading Petty Officer Engineering Laboratory Controls Division
  - Supervised repair, maintenance, testing, and quality control of reactor plant mechanical systems
  - Trained and supervised technicians in radiological controls and radiochemistry during New Construction and Start-up activities
- Seven years nuclear submarine experience
- U.S. Navy Quality Assurance Inspector/Controlled Material Petty Officer
  - Conducted detailed inspections of nuclear plant construction and maintenance
  - Developed maintenance and testing procedures
- Designed/Developed/Implemented/Evaluated/Administered various LMES leadership and health and safety training programs
- Certified Instructor HAZWOPER, Department of Labor

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Lead evaluator for Training/Qualification in the K-25 Deposit Removal Program ORR
- Lead evaluator for ORNL Facility Manager Technical Competency Evaluation, 1995
- Team member in the RA for RSS at Y-12
- Assisted in several LMES training assessments
- Completed DOE Performance Monitoring and LMES ORR courses

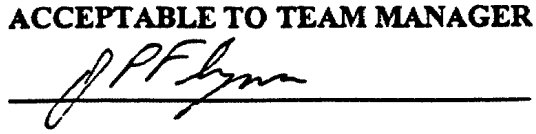
SUMMARY OF FACILITY FAMILIARIZATION:

Performed numerous support and assessment activities at Y-12

BASIS FOR ACCEPTABLE INDEPENDENCE:

Report to central training organization; no responsibilities for any Y-12 activity.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: John Jay Hummer

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

MANAGEMENT (MG): Core Objectives 23, 24, 25, 27, 29

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Engineering, U.S. Naval Academy
- U.S. Navy Nuclear Power Program, including submarine command
- M.S. Systems Management, University of Souther California
- Commercial Nuclear Power Plant Management Consultant
- Director, Safety and Health, including nuclear safety, MMES and MMC
- Director, DOE Programs, including nuclear safety, LMC

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Member, Navy Nuclear Propulsion Examining Board
- Participant in commercial nuclear power plant inspections and investigations
- Participant or leader in several MMES ESH audits
- Participant or leader in several MMC and LMC ESH audits

SUMMARY OF FACILITY FAMILIARIZATION:

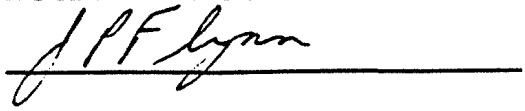
MMES-level responsibility for nuclear and other safety programs at the Y-12 Plant (1991-1994) with frequent site visits; leader of formal investigation of HF leak in EU operations, Spring 1992

BASIS FOR ACCEPTABLE INDEPENDENCE:

The MMES Director of Safety and Health reports to the Vice President, Compliance, Evaluation, and Policy.

Current position, since mid-1994, reports to an LMC VP.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: J. E. Lee

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

OPERATIONS (OP): Core Objectives 7, 19, 20, 22, 28

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Engineering, University of Tennessee at Chattanooga, Highest Honors Program
- M.S. Engineering, University of Alabama in Huntsville
- Registered Professional Engineer, State of Tennessee
- Commercial Nuclear Plant Experience
  - Design Engineer
  - Startup Engineer
  - Maintenance Engineer
  - Maintenance Manager
  - Senior Reactor Operator (SRO) trained
  - Training Manager
- Research Reactor Experience
  - Developed High Flux Isotope Reactor Conduct of Operations Program
  - SRO qualified at HFIR
  - Plant Manager at HFIR

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Developed and currently implement the HFIR self-assessment program
- Participated in HFIR restart review and approval process
- Served on activities oversight committee at Y-12 after September 1994 shut down
- Completed MMES observation training program

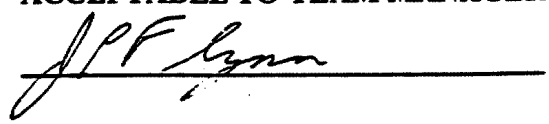
SUMMARY OF FACILITY FAMILIARIZATION:

Overview training by Y-12 management

BASIS FOR ACCEPTABLE INDEPENDENCE:

Normally assigned to High Flux Isotope Reactor at ORNL (HFIR) with no regular interface with the Y-12 site.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Ronald K. McConathy

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

TRAINING AND QUALIFICATION (TQ): Core Objectives 13, 14, 16, 17, 18

SUMMARY OF TECHNICAL QUALIFICATIONS:

- Oversight of ORNL 5480.20A TIM implementation for ORNL nuclear facilities, 1995
- ORNL Facility Management Program Manager, Office of Operational Readiness and Facility Safety, 1994-present
- Temporary assignment to the MMES Evaluations Group, July-October 1993
- Environment, Safety, and Health Group Manager, Environmental Sciences Division, 1989-1993
- Master of Science, University of Tennessee, 1976

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Completed the course in performance-based evaluation methodology in 1993.
- Participated in 1993 evaluations at Paducah and Portsmouth plants.

SUMMARY OF FACILITY FAMILIARIZATION:

Overview training by Y-12 management

BASIS FOR ACCEPTABLE INDEPENDENCE:

Normally assigned to ORNL with no regular interface with Y-12.

ACCEPTABLE TO TEAM MANAGER

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: H. A. Oliver III

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

OPERATIONS (OP): Core Objectives 7, 19, 20, 22, 28

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S., U.S. Naval Academy
- U.S. Navy Nuclear Power Program - 18 years including command of nuclear powered submarine and nuclear capable submarine tender
- Lockheed Martin Energy Systems (LMES) Evaluations Group - four years

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Certified as LMES Evaluations Program team manager and lead evaluator
- Served as team manager and as lead evaluator for operations and environment, safety, and health during evaluations of LMES facilities
- Served as team leader for management self-assessment of Y-12 Receipt, Shipment, and Storage
- Participated in management self-assessment of Y-12 Depleted Uranium Operations
- Operational Readiness Review training, November 1994

SUMMARY OF FACILITY FAMILIARIZATION:

Overview training by Y-12 management

BASIS FOR ACCEPTABLE INDEPENDENCE:

Normally assigned to LMES Evaluations Group reporting to the Manager, Evaluations Program. No direct responsibility for Y-12 Disassembly/Assembly activities.

ACCEPTABLE TO TEAM MANAGER

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Ronald D. Shaffer

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

MANAGEMENT (MG): Core Objectives 23, 24, 25, 27, 29

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S., Mechanical Engineering, Ohio State University
- U.S. Naval Nuclear Power Program - eight years
- Commercial Nuclear Plant Experience
  - Engineering
  - Licensing
  - Senior Reactor Operator
  - Operations Advisor
  - Maintenance Manager
  - Startup Engineer
  - Training Manager
  - Consultant to the NRC
- Consultant in the areas of Engineering, Operations, and Maintenance
- Lead Consultant for DOE Headquarters Offices of Nuclear Safety and Environment, Safety, and Health

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Participated in over 40 SSFIs and EDFIs in commercial nuclear facilities
- Lead over 100 integrated assessments at DOE and commercial nuclear facilities
- Member of the Management Subteam on two Tiger Teams
- Participated in 10 DOE Headquarters ORR for initial startup and restart of facilities
- Subteam Lead for Martin Marietta Corporate assessments in the areas of operations, engineering, and maintenance

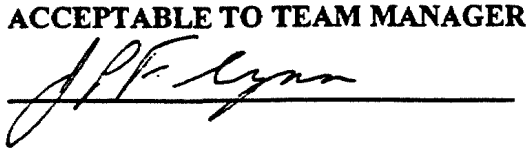
SUMMARY OF FACILITY FAMILIARIZATION:

Participated in two Martin Marietta Corporate assessments of Y-12.

BASIS FOR ACCEPTABLE INDEPENDENCE:

Have not personally performed any work for the Y-12 facility management responsible for disassembly and assembly activities.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Bruce A. Wilson

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

OPERATIONS (OP): Core Objectives 7, 19, 20, 22, 28

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Mechanical Engineering, Syracuse University
- M.S. Nuclear Engineering, University of Washington
- Licensed/Certified as Senior Reactor Operator on Two Air Force Test Reactors
- Certified Operator License Examiner, USNRC
- Certified Member, Incident Investigation Team (IIT), NRC

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Twenty-seven years experience in nuclear related areas
- Manager, NRC Resident Inspector Program
- Member of two NRC Augmented Inspection Teams (AITs)
- Team Leader, Symptom-Based Emergency Procedures
- Member of DOE/EH ORRs at Idaho, Pantex, Savannah River (F-Canyon & FB-Line), Princeton Tokomak, and TA-55 (Los Alamos)
- Management Assistance to K-25 Deposit Removal Project ORR

SUMMARY OF FACILITY FAMILIARIZATION:

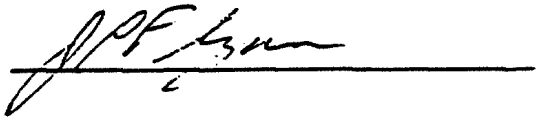
- Project Manager for Subcontractor development of Training and Qualification Programs at Y-12, including EUO, DSO, and DUO.

BASIS FOR ACCEPTABLE INDEPENDENCE:

Parallax is subcontractor to LMES; has no direct line management involvement.

Y-12 Training and Qualification Programs are separate and distinct from Operations and Procedures.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: George P. Zagursky

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

SAFETY ENVELOPE (SE): Core Objectives 4, 10, 11, 12

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Nuclear Engineering, Mississippi State University
- M.B.A., University of Miami Executive Program
- Ph.D, Nova Southeastern University
- Commercial Nuclear Experience
  - Start-up Engineer and Hot Functional Coordinator
  - Technical Support Supervisor
  - Design Engineering Mechanical/Nuclear Group Manager
  - Senior Reactor Operator (SRO) trained
- Institute of Nuclear Operations (INPO)
  - Assistant to the Vice President of Analysis & Engineering
  - Technical Support Plant/Corporate Evaluator and Section Head
  - Design Engineering Lead Corporate Evaluator
  - Developed INPO's position on Configuration Management, which was published in document #INPO-87-003
  - Developed the original INPO Design Engineering corporate evaluation performance objectives and criteria
- DOE Experience
  - Senior Consultant in the areas of Management, Operations, Design Change Process, Configuration Management (CM), Training, and Business Process Re-engineering
  - Helped develop various management and technical programs at Y-12, K-25, Pantex, Savannah River, Fernald, et al
  - Washington team member for DOE-STD-1073-93 on CM

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Participated in 27 INPO plant and corporate evaluations
- As a consultant, lead/participated in over 30 additional NRC/INPO style evaluations, audits, and assessments at various commercial nuclear plants and DOE facilities

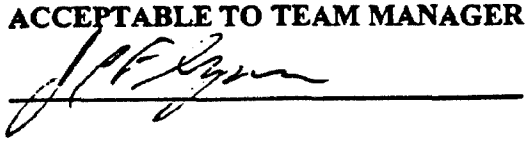
SUMMARY OF FACILITY FAMILIARIZATION:

In the past, assisted Y-12 in developing their CM Program.

BASIS FOR ACCEPTABLE INDEPENDENCE:

LMES subcontractor with no regular interface with Y-12.

ACCEPTABLE TO TEAM MANAGER



APPENDIX 2

CRITERIA AND REVIEW APPROACH DOCUMENTS (CRAD)

Disassembly/Assembly Activities
Implementation Plan CRADs

Contents Page

MANAGEMENT (MG)

Objective

MG-1 (CO-23) Managerial qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)

Criteria

1. Managerial qualifications of Y-12 management, up to the Manager, Nuclear Operations, and the Manager, Quality Operations, meet the requirements specified in LMES policy statements, position descriptions, and performance appraisal criteria.

2. Managers demonstrate an awareness and understanding of the requirements and the methods for managing identified deficiencies and issues identified by internal, DOE, and external organizations.

3. Managerial personnel understand and effectively promote awareness of requirements for safe operation as defined in appropriate policies and procedures.

Approach

Record Review:

1. Verify that LMES policy statements, position descriptions, and performance appraisal criteria define managerial qualifications.

2. Verify that entry level requirements are established for each operations management position, including as a minimum education, experience, technical, and medical requirements.

3. Determine that a record of verification of managers (above first line supervisors) meeting the specified requirements is maintained. (See Criteria #1).

Interviews:

None

Shift Performance:

Assess managerial awareness and performance of job responsibilities while observing evolutions to determine if they adequately promote and require necessary administrative and safety-basis requirements.

Objective

MG-2 (CO-24) Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety. (CR-11)

Criteria

1. Functions, assignments, responsibilities, and reporting relationships for operating management (up to the Manager, Nuclear Operations), and criticality safety organizations are adequately defined, understood, and implemented.

2. Functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors assigned as compensatory measures are defined, understood, and implemented.

3. The conditions under which mentors can be removed is documented.

Approach

Record Review:

1. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities and reporting relationships of the operations supervisors and managers in Appendix VII of the Plan of Action.

2. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities and reporting relationships of the criticality safety engineers, supervisors, and manager.

3. Verify that there is a list of mentors, if any, assigned as compensatory measures. Verify this list states which compensatory measure each mentor is responsible for.

4. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors used as compensatory measures.

5. Verify that there is documentation that mentors assigned to D&A meet specified qualification and experience requirements.

6. Verify that there is documentation of the conditions under which mentors can be removed.

7. Review the weekly reports of at least one mentor used as a compensatory measure; evaluate the adequacy of response to issues by line management.

Interviews:

Interview at least three line managers, including front-line supervisors, and three mentors to verify they understand the compensatory measures in place.

Shift Performance:

1. While observing evolutions, verify that the specified functions, assignments, responsibilities, and reporting relationships are properly implemented.

2. Evaluate effectiveness of mentors used as compensatory measures.

Objective

MG-3 (CO-25) A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. (CR-6)

Criteria

1. Open findings and corrective actions are assessed to determine if their lack of closure may preclude safe operations.

2. Operations management has reevaluated internal and external assessments performed in D&A since October 1993 to determine if corrective actions were appropriate.

3. The DOE order self-assessment program is ongoing and viable.

4. The ESAMS database is used to track deficiencies and recommendations made by oversight groups, official review teams, and audit organizations, as well as the corrective actions status.

Approach

Record Review:

1. Review the operations reevaluation of internal and external assessments performed on D&A operations since October 1993.

2. Verify that 9204-2/2E operations and quality support know what open findings and corrective actions from oversight groups, audits, self-assessments, etc., are assigned to them.

3. Review the list of open findings and corrective actions to determine adequacy of status.

4. Select five findings or corrective actions closed since April 1995 and review the associated files for adequacy of evidence of closure.

5. Review the status of the self-assessment program to determine adequacy for supporting line management needs.

6. Select at least five deficiency reports made by oversight groups, official review teams, and audit organizations and verify they have been entered into ESAMS.

Interviews:

Interview the 9204-2/2E operations manager and quality support manager to assess their understanding of how issues are managed.

Shift Performance:

For the five findings or corrective actions closed (see Record Review item #4), walk down the specified actions to determine they remain in place and resolved the original deficiency.

Objective

MG-4 (CO-27) Nonconformances to applicable DOE orders have been identified, and schedules for gaining compliance have been justified in writing and formally approved. (CR-7)

Criteria

1. Noncompliances with the 51 DOE orders of interest to the DNFSB have approved schedules for gaining compliance.

2. Actions described in the Requests for Approval (RFA) have been adequately addressed for the facility, including both site-level programmatic and facility-level programmatic and adherence-based assessments.

3. Operations managers have reviewed the compensatory and corrective actions taken to address the identified nonconformances and have verified that they remain in place.

Approach

Record Review:

1. Review a representative sample of the records of compliance reviews for the 51 DOE orders of interest to the DNFSB.

2. For those orders where noncompliances were identified, verify the existence of approved schedules for gaining compliance.

3. Review the records that document management review and verification that compensatory measures and corrective actions remain in place.

Interviews:

None

NOTE: Representatives of the Y-12 order compliance program were interviewed during the RSS MSA with acceptable results.

Shift Performance:

Select three RFAs and verify that actions described have been addressed.

Objective

MG-5 (CO-29) A program is established to promote a site-wide safety culture. (CR-14)

Criteria

1. Personnel demonstrate an increased awareness and understanding of criticality safety.

2. All workers and supervisors attended the awareness sessions conducted following the September 22, 1994 event.

3. Personnel understand the safety messages communicated during the awareness sessions.

Approach

Record Review:

1. Review training records to verify worker and supervisor attendance at awareness sessions conducted following the September 22, 1994 event.

2. Review Occurrence Reporting System reports for OSR, criticality safety and radiological events; evaluate the effectiveness of corrective actions to prevent recurrence; and evaluate the timeliness of resolution.

3. Review the employee safety and health concerns program(s). Evaluate the appropriateness and timeliness of response to the employee.

NOTE: Review of records incident to operations (e.g., training and required reading) should also be used to verify the condition of the safety culture.

Interviews:

1. Select two employees (and their supervisors) who have submitted safety and health concerns since the September 22, 1994 incident. Determine the adequacy of response to the employee.

2. Interview two operators from each work group and three line managers, including front-line supervisors in each division to verify their understanding of the safety message communicated during the awareness sessions.

3. Interview manager of safety and health concern program to determine the status of the program.

NOTE: Interviews with operators and operations supervisors incident to level of knowledge and operations should also be used to verify the condition of the safety culture.

Shift Performance:

In conjunction with other functional area activities (e.g., operations drills), evaluate satisfactory establishment of a safety culture.

OPERATIONS (OP)

Objective

OP-1 (CO-7) There are adequate and correct procedures for operating systems and utility systems. (CR-1)

Criteria

1. Criticality Safety Approvals (CSA) and operating procedures are technically accurate, consistent with each other, and incorporate appropriate safety limits.

2. A viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Approach

Record Review:

1. Review the engineering analysis for five CSAs to verify all technical requirements have been included in the CSAs.

2. Compare each operating procedure with its associated CSA to verify they are consistent with each other.

3. Compare each operating procedure with its applicable OSR to verify it incorporates appropriate safety limits.

4. Review site and/or divisional procedure(s) to verify a viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Interviews:

None

Shift Performance:

1. Walk down each CSA to verify the conditions in the field match the conditions required in the CSA.

2. Walk down the five latest procedure revisions through the approval, issuance, training, and use process to verify the procedure revisions system works correctly in a timely manner and is viable.

3. Observe at least three simulations/evolutions to verify personnel are using the latest procedures, and the procedures are adequate and correct.

Objective

OP-2 (CO-19) The implementation status of DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," is adequate for operations. (CR-12) The scope is limited to the assessment of the following chapters of DOE Order 5480.19:

Chapter I.	Operations Organization and Administration
Chapter II.	Shift Routines and Operating Practices
Chapter V.	Control of On-the-Job Training
Chapter VI.	Investigation of Abnormal Events
Chapter VIII.	Control of Equipment and System Status
Chapter XIV.	Required Reading
Chapter XV.	Timely Orders to Operators
Chapter XVI.	Operating Procedures
Chapter XVII.	Operator Aid Postings

Criteria

1. Actions described in the Request for Approvals (RFA) have been adequately addressed for the facility/activity.

2. Compensatory measures identified in the RFAs shall be employed where full compliance with the conduct of operations requirements cannot be met prior to resumption.

Approach

Record Review:

1. Review the conduct of operations portions of the RFAs and any RFA status update information to verify that implementation status is in accordance with the RFAs.

2. Review the records and paperwork associated with each DOE Order 5480.19 chapter within the scope of the core objective to verify effective conduct of operations implementation.

Interviews:

Interview at least two operators in each work group and at least three line/shift managers, including front-line supervisors, in each division to assess their understanding of the conduct of operations principles, including any compensatory measures, in the performance of their duties.

Shift Performance:

1. Observe at least three simulations/evolutions and two drills to determine if the facility has effectively implemented conduct of operations requirements.

2. Observe at least three operators conducting their normal daily routines to verify they adequately demonstrate conduct of operations principles.

3. While observing simulations/evolutions, drills, and daily routines verify the compensatory measures identified in the RFAs are in place and effective.

Objective

OP-3 (CO-20) Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements. (CR-14)

Criteria

1. Personnel exhibit awareness of safety-related policies and procedures necessary for daily operations.

2. Personnel exhibit awareness of requirements for safe operation as reflected in CSAs, OSRs, and appropriate operating procedures.

Approach

Record Review:

None

NOTE: Worker training on safety, health, and environmental requirements is addressed by CO-13 and CO-16.

Interviews:

None

Shift Performance:

1. During evolutions observe that personnel comply with radiological controls and radiation work permits.

2. During evolutions observe that personnel exhibit compliance with CSAs used as procedures.

3. During evolutions observe that personnel exhibit compliance with Safety Work Permits, other related permits, and safety requirements in procedures.

Objective

OP-4 (CO-22) A routine operations drill program, including program records, has been established and implemented. (CR-9)

Criteria

1. A drill program for routine operations has been established to ensure operator readiness and knowledge of appropriate response to indications.

2. The routine drill programs at the facilities are based on a graded approach driven by the specific facility hazard categorization analysis.

3. Typical drills will have equipment failure, miscalibration, process upset, or unexpected conditions scenarios.

Approach

Record Review:

1. Review and assess the adequacy of drill procedures and drill guides for operations and quality activities in 9204-2/2E.

2. Review and assess the adequacy of program records.

3. Review facility drill programs to verify they are based on a graded approach driven by the specific facility hazard categorization analysis.

4. Review drill scenarios to verify they contain equipment failure, miscalibration, process upset, or unexpected condition scenarios.

Interviews:

Interview the managers of the drill programs for operations and quality to assess the adequacy of methods used to select drill scenarios, drill participants, and to determine the status of the program.

Shift Performance:

1. Observe and evaluate at least two operations drills, including pre-drill and post-drill activities, applicable to D&A operations.

2. Observe and evaluate at least two operations drills, including pre-drill and post-drill activities, applicable to quality operations in 9204-2/2E.

Objective

OP-5 (CO-28) An adequate start-up or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators. (CR-10)

Criteria

1. Appropriate restart programs have been developed to demonstrate that the identified processes are fully operable to perform their intended functions.

2. Verify the appropriate calibrations, preventive maintenance, and restart leak checks, etc., have been completed.

3. Restart program documents the operability of the equipment that has been in the stand down mode, the usefulness of the procedures, and the relevance of the training to the intended use of the restarted equipment.

Approach

Record Review:

1. Equipment that has been in the stand-down mode is identified; equipment to be restarted is identified; and equipment to be taken out-of-service is identified.

2. For equipment to be restarted, verify that required calibrations, preventive maintenance, and restart leak checks have been completed.

3. For equipment that is to be restarted, verify that operations procedures have been reviewed and revised as necessary to make them useful.

4. Verify that training has been conducted to the intended use of the restarted equipment.

5. Verify restart programs documents the operability of the equipment that has been in the stand down mode.

Interviews:

None

Shift Performance:

1. Walk down the list of equipment that is not to be restarted and verify each piece is tagged out-of-service.
2. In conjunction with CO-7, observe dry runs of five procedures on equipment to be restarted to determine acceptable performance of equipment, procedures, and training.

SAFETY ENVELOPE (SE)

Objective

SE-1 (CO-4) There are adequate and correct safety limits for operating systems. (CR-1)

Criteria

1. The OSR for Building 9204-2/9204-2E is technically accurate and consistent with the physical facility configuration.

2. Designated equipment and systems are present as described in the OSR.

3. The OSR can be technically accomplished.

4. Compliance with the OSR is verified.

Approach

Record Review:

1. Review the Building 9204-2/9204-2E OSR for technical accuracy.

2. Compare the Building 9204-2/9204-2E OSR against current facility drawings to verify consistency.

3. Ensure surveillance requirements and LCO actions of the OSR are covered in approved procedures.

4. Review surveillance records to verify surveillances are up to date and demonstrate the OSR requirements are being met.

Interviews:

None

Shift Performance:

1. Walk down Building 9204-2/9204-2E and verify facility equipment and systems are present as described in the OSR.

2. Observe at least three simulations/evolutions covered by the OSR to verify they can be technically accomplished and operators/managers are in compliance with the OSR.

Objective

SE-2 (CO-10) A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, safety-related process systems, and safety-related utility systems. (CR-5)

Criteria

The status of the safety systems and safety-related process system components in the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs is satisfactory.

Approach

Record Review:

Review maintenance Recall-A Program and ET&I and ICP inspection and calibration program records to verify safety systems and safety-related process system components have been inspected/calibrated and are within the required specification and periodicity.

Interviews:

None

Shift Performance:

1. Compare safety systems and safety-related process system components in the field against maintenance Recall-A Program and ET&I and ICP inspection and calibration program records to verify records reflect installed components.

2. Verify safety systems and safety-related process system component inspection/calibration sticker dates in the field match the dates in the inspection/calibration records.

Objective

SE-3 (CO-11) Safety system and other instruments that monitor Technical Safety Requirements (OSRs at Y-12) are monitored for calibration. (CR-5)

Criteria

Calibration has been properly performed at the required frequency for all safety systems and safety-related process system components.

Approach

Record Review:

1. Verify all calibration/inspection requirements for safety system and safety-related process system components are incorporated into the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs.

2. Review calibration/inspection records to verify all calibrations/inspections have been performed at the required frequency.

3. Review records to verify standards used for calibration/inspections are acceptable.

Interviews:

None

Shift Performance:

1. Observe rounds in Building 9204-2/9204-2E to verify calibration/inspection status of safety systems and safety-related system components are being monitored.

2. Observe at least two calibration/inspections to verify they are being properly performed.

Objective

SE-4 (CO-12) All safety and safety-related utility systems are currently operational and in a satisfactory condition.

Criteria

1. Calibration has been performed at the required frequency for all safety systems. (See CO-11.)

2. Procedures are in place to provide surveillance of safety-related equipment.

3. Assess the status of the safety systems in the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs. (See CO-10.)

Approach

Record Review:

1. Review calibration/inspection records to verify all calibrations/inspections have been performed at the required frequency. (See CO-11.)

2. Compare site/division surveillance procedures against the OSR surveillance requirements to verify they are compatible.

3. Review surveillance records to verify surveillances are current. (See CO-4.)

Interviews:

None

Shift Performance:

Walk down, to include actual or simulated operation, all safety and safety-related utility systems to verify they are currently operational and in a satisfactory condition.

TRAINING AND QUALIFICATION (TQ)

Objective

TQ-1 (CO-13) Training and qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)

Criteria

1. Training and qualification requirements have been implemented according to the schedule outlined in the Y-12 Plant Training Implementation Matrix (TIM).

2. Compliance with the TIM schedule is current.

3. Training and qualification of personnel is at a level sufficient to support resumption, or appropriate compensatory measures are in place.

Approach

Records Review:

1. Review training and qualification program procedures to verify requirements have been implemented according to the schedule outlined in the TIM.

2. Review training and qualification records to verify compliance with the TIM schedule.

3. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption. If deficiencies exist, review records that show line managers have approved and put in place appropriate compensatory measures.

4. Review records to determine the following:

   a. Content of training programs is determined by systematic analysis.

   b. Qualification requirements (especially those leading to certification) and medical requirements are clearly specified.

   c. Division training staff qualification requirements have been met.

   d. Verification of qualification requirements leading to certification has been conducted.

   e. A graded approach is used to establish program content.

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption and they understand any compensatory measures in place.

Shift Performance:

Observe operators, support personnel, and line managers performing/simulating at least three operations to verify their level of training and qualification is sufficient to support resumption and they understand any compensatory measures in place.

Objective

TQ-2 (CO-14) Technical qualifications of contractor personnel responsible for facility operations are adequate. (CR-19)

Criteria

1. Compliance with the TIM schedule is current. (See CO-13.)

2. Training and qualification of personnel is at a level sufficient to support resumption. (See CO-13.)

3. Personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operations.

4. Applicable non-reactor nuclear facility managers, supervisors, operators, technicians, maintenance support, and technical support personnel are evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

Approach

Record Review:

1. Review training and qualification program procedures to verify compliance with the TIM schedule. (See CO-13.)

2. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption.

3. Review records that demonstrate line management has put in place controls to ensure personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operation.

4. Review records that demonstrate appropriate personnel have been evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption. Also verify they know that if personnel do not meet the current qualification requirements for a particular operation, they shall have a qualified individual with them while performing that particular operation. (See CO-13.)

Shift Performance:

Observe operations, support personnel, and line managers performing operations to verify their training and qualification are at a level sufficient to support resumption. (See CO-13.)

Objective

TQ-3 (CO-16) Training has been performed to the latest revision of procedures. (CR-18)

Criteria

All applicable personnel have been trained to the latest revision of the procedure.

Approach

Record Review:

1. Verify line management has designated in writing personnel who are necessary to perform specified tasks.

2. Review personnel training and qualification records to verify the personnel who are designated to perform specific tasks have been trained to the latest revision of the procedures applicable to each task.

3. Verify that continuing training programs are established and implemented.

Interviews:

None

Shift Performance:

Observe at least three simulations/evolutions to verify that personnel conducting the simulations/evolutions are designated in writing to perform them and have been trained to the latest revision of the applicable procedure.

Objective

TQ-4 (CO-17) Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance. (CR-3)

Criteria

Evaluate required facility-specific knowledge of operations personnel by observations of the performance of simulations, drills, and through oral interviews of the operating personnel.

Approach

Record Review:

1. Review documentation to ensure examination requirements for qualification/certification have been met.

2. Review records for objective evidence of the examination content, administration, grading, and success level of the candidate.

3. Review documentation to ensure examination content is based on requirement elements as appropriate to the position.

Interviews:

1. Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to determine if their level of knowledge is adequate.

2. Make a short comprehensive examination, which will be administered to a selected group of division personnel by management. Division manager will provide to the LMES RA team the completed examination. Use this information to determine the adequacy of facility-specific facility knowledge.

Shift Performance:

1. Observe at least three simulations/evolutions performed by operating personnel to verify facility-specific level of knowledge is adequate.

2. Observe at least two drills performed by operating personnel to verify facility-specific level of knowledge is adequate.

Objective

TQ-5 (CO-18) There are sufficient numbers of qualified personnel to support safe operations.

Criteria

The numbers and qualifications of operating personnel necessary to perform the specified tasks defined in the operating procedures are adequate for normal and postulated emergency conditions.

Approach

Record Review:

Verify the numbers and qualifications of operating personnel required in the operating procedures are adequate for normal and postulated emergency conditions.

Interviews:

None

Shift Performance:

1. Observe at least three simulations/evolutions to determine if the numbers and qualifications of operating personnel are adequate.

2. Observe at least two drills to determine if the numbers and qualifications of operating personnel are adequate.

APPENDIX 3

FINDING CLASSIFICATION CRITERIA

Appendix 3: Finding Classification Criteria

This checklist will be used by the RA team to determine whether a deficiency must be corrected prior to startup.

A. Initial Screening

1. Does this issue involve a safety system?

2. Does this issue involve processes, functions or components identified in the Technical Safety Requirements/Operational Safety Requirements or nuclear safety control procedures?

3. Does this issue involve potential adverse environmental impact exceeding regulatory or site specific release limits?

4. Does this issue impact non-safety processes, functions or components which could adversely impact safety related processes, functions or components?

5. Is this issue non-compliant with a Energy Systems approved startup document?

6. Does this issue indicate a lack of adequate procedures or administrative systems?

7. Does this issue indicate operational or administrative non-compliance with procedures or policy?

8. Has this issue occurred with a frequency that indicates past corrective actions have been lacking or ineffective?

9. Does this issue require operator training not specified in existing facility training requirements?

10. Does the issue involve a previously unknown risk to worker or public safety and health or a previously unknown threat of environmental insult or release.

If the response to any of the above is yes, further evaluation, in accordance with the issue impact criteria below is required. If the response to all of the above is no, the issue may be resolved after restart.

B. Issue Impact

1. Does the loss of operability of the item prevent safe shutdown, or cause the loss of essential monitoring?

2. Does the loss of operability of the item require operator action in less than ten (10) minutes to prevent or mitigate the consequences of events described in the Safety Analysis?

3. Does the loss of operability of the item cause operation outside the TSR/OSRs or Safety Analysis?

4. Does the loss of operability of the item result in a reduction of the margin of safety as described in the Safety Analysis?

5. Does the issue indicate a lack of control which can have a near term impact on the operability or functionality of safety related systems?

6. Does the issue involve a violation or potential violation of worker safety or environmental protection regulatory requirements which poses a significant danger to workers, the public, or of environmental insult or release?

If the response to any of the above questions is yes, the item should be considered a startup item.

APPENDIX 4

RA ASSESSMENT AND DEFICIENCY FORMS

RA ASSESSMENT FORM

Functional Area:	CRA Number/Title:	Date:

Method of Appraisal (short narrative description):

Personnel contacted/position:

Records & other documents reviewed:

Evolutions/operations witnessed:

Discussion:

Conclusion:

Inspected by:	Approved by:_____ RA Team Manager Date:

Form 1

RA DEFICIENCY FORM

Functional Area:	CRA Number/Title:	Date: ID #:

Requirement:

Reference(s) (specific as to section):

Finding_____ Observation: _____

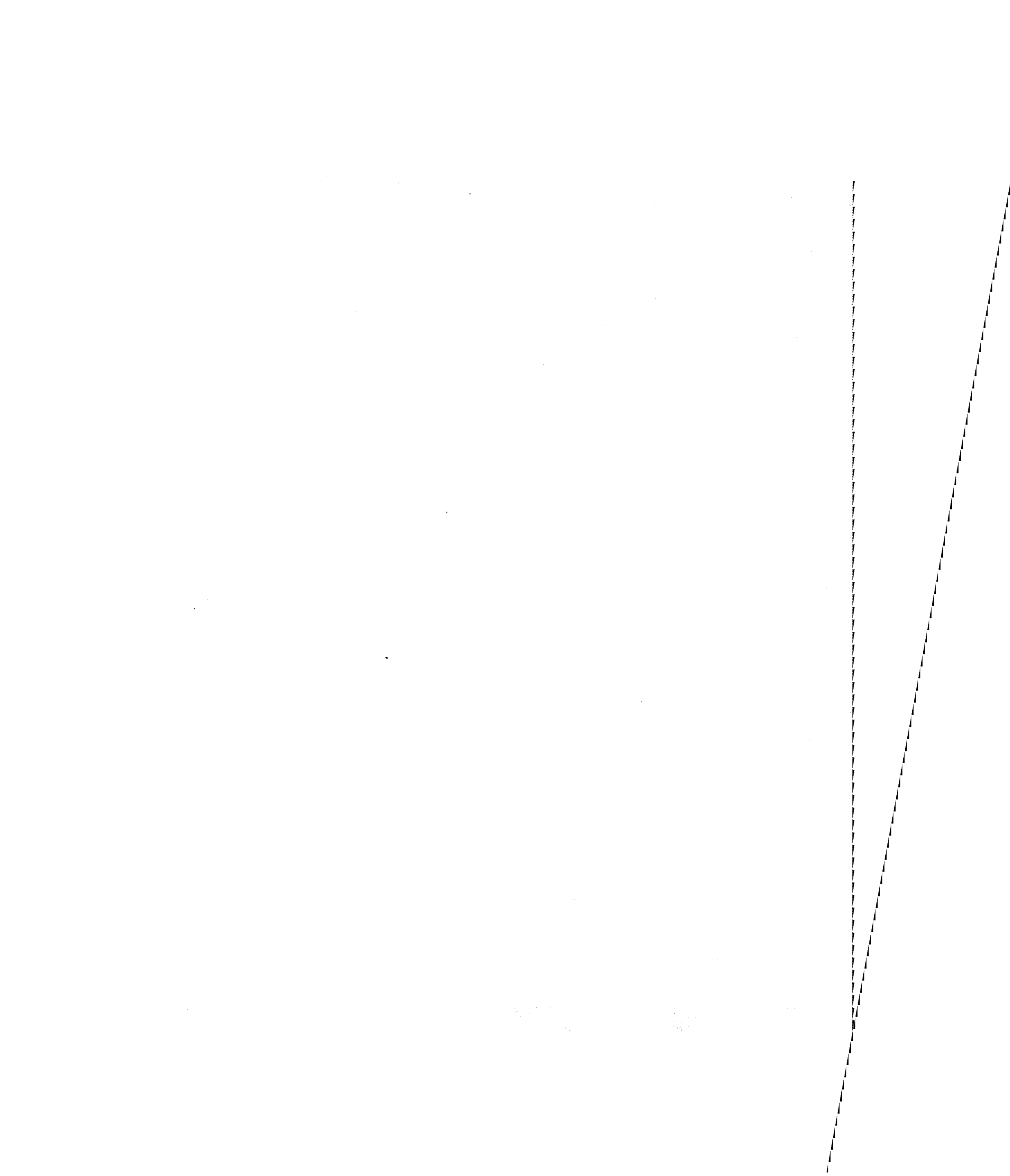
Discussion:

Finding Designation: Pre-start_____ Post-Start_____	Inspector:_____
Group Leader:_____ Date:	Approved by:_____ RA Team Manager Date:

Form 2

APPENDIX B

Assessment Forms
(Form 1)



FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-1 (CO-23)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-23 Managerial qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)

Criteria

1. Managerial qualifications of Y-12 management, up to the Manager, Nuclear Operations, and the Manager, Quality Operations, meet the requirements specified in LMES policy statements, position descriptions, and performance appraisal criteria.

2. Managers demonstrate an awareness and understanding of the requirements and the methods for managing identified deficiencies and issues identified by internal, DOE, and external organizations.

3. Managerial personnel understand and effectively promote awareness of requirements for safe operation as defined in appropriate policies and procedures.

Approach

Record Review:

1. Verify that LMES policy statements, position descriptions, and performance appraisal criteria define managerial qualifications.

2. Verify that entry level requirements are established for each operations management position, including as a minimum education, experience, technical, and medical requirements.

3. Determine that a record of verification of managers (above first line supervisors) meeting the specified requirements is maintained. (See Criteria #1.)

Interviews:

None

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-1 (CO-23)	Date: January 26, 1996

Shift Performance:

Assess managerial awareness and performance of job responsibilities while observing evolutions to determine if they adequately promote and require necessary administrative and safety-basis requirements.

Personnel contacted/position:

- J. T. Fisher, DSO resumption manager
- R. N. Shelton, DSO training manager
- E. A. Martin, nuclear operations trainer
- R. J. Buttram, Energy Systems human resources generalist
- D. D. Cottrell, Energy Systems compensation program manager

Records & other documents reviewed:

- Evidence Files C901, C903, and C903CS
- Performance appraisal instructions and forms
- Position description notebooks

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. Evidence File Review

    a. The positions considered "responsible for facility operations" were the nuclear operations manager, the disassembly and storage organization manager, the assembly and disassembly operations manager, and the technical support manager. Based on the organization chart and actual direction of facility operations, the facility support manager, the shift manager and three subordinate supervisors, and the shift technical advisors should also have been considered "responsible for facility operations".

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-1 (CO-23)	Date: January 26, 1996

b. Letters of verification of manager's qualification did not include either the specific education and experience requirements or the title of the management position. Additionally, they made no reference to technical or medical requirements. They were dated, and were compared to approved position descriptions in effect on that date to establish the qualifications that were verified.

c. The Individual Development Plan Worksheet for P. R. Wasilko stated for "Educational Background" and "Work Experience" that "Resume is in C901 file". The resume was not in the C901 file. A "Summary of Professional Experience" for Mr. Wasilko was in the C903 file and included education and experience.

d. Position descriptions in the evidence file were incomplete and somewhat disorganized.

2. The performance appraisal instructions and forms did not define managerial qualification requirements. They did require evaluation of "competence: skills and knowledge to perform job." ES&H performance was evaluated in two categories of the appraisal.

3. Position descriptions defined managerial requirements, including education, experience, technical, and medical requirements. Position descriptions were approved for all positions in DSO, and for the manager, nuclear operations. No position descriptions were available for QO personnel.

Conclusion:

Documentation in official records demonstrates that appropriate qualification requirements to support resumption of safe operation are established for contractor personnel, and are met by incumbent managers. Resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by: _____ RA Team Manager Date: 2/7/96

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-24 Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety. (CR-11)

Criteria

1. Functions, assignments, responsibilities, and reporting relationships for operating management (up to the Manager, Nuclear Operations), and criticality safety organizations are adequately defined, understood, and implemented.

2. Functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors assigned as compensatory measures are defined, understood, and implemented.

3. The conditions under which mentors can be removed is documented.

Approach

Record Review:

1. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities and reporting relationships of the operations supervisors and managers in Appendix VI of the Plan of Action.

2. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities and reporting relationships of the criticality safety engineers, supervisors, and manager.

3. Verify that there is a list of mentors, if any, assigned as compensatory measures. Verify this list states which compensatory measure each mentor is responsible for.

4. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors used as compensatory measures.

5. Verify that there is documentation that mentors assigned to D&A meet specified qualification and experience requirements.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996

6. Verify that there is documentation of the conditions under which mentors can be removed.

7. Review the weekly reports of at least one mentor used as a compensatory measure; evaluate the adequacy of response to issues by line management.

Interviews:

Interview at least three line managers, including front-line supervisors, and three mentors to verify they understand the compensatory measures in place.

Shift Performance:

1. While observing evolutions, verify that the specified functions, assignments, responsibilities, and reporting relationships are properly implemented.

2. Evaluate effectiveness of mentors used as compensatory measures.

Personnel contacted/position:

- J. T. Fisher, DSO resumption manager
- R. E. Hester, supervisor, quality material and equipment evaluations department
- M. K. Waters, radiographer
- B. G. Elkins, radiographer
- W. F. Mohr, mentor
- T. J. Trapuzzano, mentor
- M. E. Wagoner, mentor
- D. M. Nabors, shift manager
- R. J. Shelton, DSO training manager
- J. E. Radle, D&A manager
- R. K. Roosa, manager, nuclear operations

Records & other documents reviewed:

- Evidence File C902
- Y70-150, "Nuclear Criticality Safety Program," Rev. Date 8/25/95
- Y70-160, "Criticality Safety Approval System," Rev. Date 8/23/95
- Y/AD-627, "Mentor Program Description for Y-12 Resumption," dated 3/27/95

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996

- Y/AD-627, Rev. 1, Draft, "Mentor Program Description for Y-12 Resumption"
- Y-12 Quality Organization Mission and Roles memo from A. K. Zava, approved by T. R. Butz, dated May 2, 1995

Evolutions/operations witnessed:

- Radiography
- Criticality Accident Alarm System surveillance
- Quarterly surveillance test
- C-5 disassembly
- Facility walkdowns

Discussion:

1. Evidence File C902 was not complete. There was no evidence to show that the functions, assignments, responsibilities, reporting relationships, and qualification of the mentors assigned as compensatory measures were adequately defined, understood, and implemented. After discussion with the DSO resumption manager, it was determined that another evidence file (C1301) addressed mentor compensatory measures. File C1301 was reviewed, and it was determined that Y/AD-627, "Mentor Program Description for Y-12 Resumption," was under revision and could not be used to identify duties, responsibilities, authorities, and qualifications. The evidence file did, however, contain the procedures for which mentor coverage was required as compensatory measures as related to conduct of operations.

2. There was also no evidence to show that functions, assignments, responsibilities, and reporting relationships for operating management were adequately defined, understood, and implemented. Further discussion with the DSO resumption manager indicated that there may have been evidence of these requirements elsewhere. However, as of January 16, 1996, no other information was available. The evidence was limited to the operations management responsible for the D&A functions at Y-12. This included only four senior managers: operations, technical, DSO manager, and the manager, nuclear operations.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996

During facility walk downs and observed evolutions, the reporting relationships within DSO and the Quality Organization (QO) appeared effective. Further, the quality supervisor, when he encountered procedural difficulties during radiography, ensured that the operations manager was aware.

The only area of concern is with the duties, responsibilities, and reporting relationships of the mentors.

3. The draft revision to Y/AD-627, "Mentor Program Description for Y-12 Resumption," was reviewed and questions were developed to be discussed with mentors assigned to D&A functions. This effort was centered around interfacing responsibilities with the operations organization. Interviews with the quality radiography supervisor and two radiographers indicated that some confusion existed with respect to the reason that mentors were required. The supervisor and technicians said they were aware of the capabilities of the mentors to stop work and/or make suggestions. However, they could not explain the Strategy III usage as compensatory measures. However, the supervisor did know which evolutions required a Strategy III mentor.

4. Job descriptions/qualifications for D&A operations personnel contained the responsibilities, authorities, qualifications, and training requirements for DSO staff from technician to the operations and technical managers. All of the descriptions were reviewed and approved by DSO management. The job descriptions for the DSO manager, and the manager, nuclear operations were maintained by the human resources organization for LMES.

5. The QO job descriptions are not formalized and organized in an easy to obtain manner. There was confusion over who was responsible for maintaining and updating the position duties, responsibilities, and authorities matrix for QO. This function resided with the training organization in DSO, which was responsible for meeting the requirements of the Training Implementation Matrix. However, the QO training organization did not have the responsibility. A review of the Quality Organization mission, roles, and organization structure was performed, and it was not specific to the managers and supervisors within the Quality Organization. This document was written on an organizational level and, therefore, did not address specific individuals by title or category.

6. The current and draft Mentor Program Description did not contain measurable or achievable goals to be obtained in order to remove mentors as compensatory measures. The current guidance revolved around satisfactory implementation of conduct of operations, without defining what that was.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996

7. Communications between the Quality Organization and the Operations Organization were not effective. The following are examples of problems noted during the assessment period:

   a. The requirement to gain DOE-ORO concurrence for product procedure changes related to Special Package procedures was not communicated to the Quality Organization. This was discovered during the radiography evolution that was observed.

   b. The listing of the D&A procedures that require strategy III mentors was developed. However, the Quality Organization was not on distribution, although some of their procedures were involved.

8. During the C5 disassembly observation, it was determined that the mentors assigned as compensatory measures were not respirator qualified. This lack of qualification precluded them from adequately performing their functions in the walk-in hood, because it was established as an airborne contamination area. This is documented in Form II, RA-MG-2-3.

Conclusion:

After correction of the prestart findings associated with this area, the functions, assignment, responsibilities, and reporting relationships will be adequate to support resumption of operations associated with C5 disassembly and the electron beam welders, with mentors in place.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by: _____ RA Team Manager Date: 2/7/96

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-25)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-25 A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. (CR-6)

Criteria

1. Open findings and corrective actions are assessed to determine if their lack of closure may preclude safe operations.

2. Operations management has reevaluated internal and external assessments performed in D&A since October 1993 to determine if corrective actions were appropriate.

3. The DOE order self-assessment program is ongoing and viable.

4. The ESAMS database is used to track deficiencies and recommendations made by oversight groups, official review teams, and audit organizations, as well as the corrective actions status.

Approach

Record Review:

1. Review the operations reevaluation of internal and external assessments performed on D&A operations since October 1993.

2. Verify that 9204-2/2E operations and quality support know what open findings and corrective actions from oversight groups, audits, self-assessments, etc., are assigned to them.

3. Review the list of open findings and corrective actions to determine adequacy of status.

4. Select five findings or corrective actions closed since April 1995 and review the associated files for adequacy of evidence of closure.

5. Review the status of the self-assessment program to determine adequacy for supporting line management needs.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-25)	Date: January 26, 1996

6. Select at least five deficiency reports made by oversight groups, official review teams, and audit organizations and verify they have been entered into ESAMS.

Interviews:

Interview the 9204-2/2E operations manager and quality support manager to assess their understanding of how issues are managed.

Shift Performance:

For the five findings or corrective actions closed (see Record Review item #4), walk down the specified actions to determine they remain in place and resolved the original deficiency.

Personnel contacted/position:

- L. E. Pender, resumption staff
- P. L. Johnson, D&A QO ESAMS staff
- W. L. Estep, quality assurance and issue management
- J. E. Radle, D&A manager

Records & other documents reviewed:

- Evidence Files C1001, C1002, C1003, and C1004
- List of open findings and corrective actions
- ESAMS files of findings and corrective actions for D&A
- Operations reevaluation of assessments performed on D&A

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-25)	Date: January 26, 1996

Discussion:

1. Evidence File Review

   a. A list of assessments for the last three years, and older if corrective actions remained open, was in C1001.

   b. The operations reevaluation of the adequacy of corrective actions found many of the corrective actions inadequate or unsatisfactory, but the action plan for D&A resumption provided satisfactory corrective action for most of those that related to D&A.

2. The reevaluation of assessment findings and corrective actions used ESAMS as the starting point. It is possible that some assessment findings, and particularly some CSA infractions identified by D&A or other internal employees, did not get recorded in ESAMS, and thus were not being reevaluated as part of the resumption activity. A plan to go back to assessment organizations to ensure that all findings related to D&A are pursued and reevaluated was being developed. This issue had been previously identified by YSORT (YSORT 3004).

3. Initial review of ESAMS records showed five of seven items properly closed. The other two did not have all required documents to demonstrate closure. For one of the two items, the closure documents did not fully address the finding (I0026018).

4. Interviews indicated that not all deficiencies and corrective actions were entered into ESAMS, and some were not tracked in a formal system. Issues identified during some management walkarounds were tracked informally.

5. DSO had developed an internal assessment program with monthly focus areas, check lists, and reports leading to tracking of deficiencies and corrective actions in ESAMS. The program is planned for implementation in January 1996.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-25)	Date: January 26, 1996

Conclusion:

Some problems were noted with deficiencies being tracked outside of ESAMS and with ESAMS items being closed when the corrective action was not complete. Overall, activities in this area are sufficient to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by: _____ RA Team Manager Date: 2/7/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-27 Nonconformances to applicable DOE orders have been identified, and schedules for gaining compliance have been justified in writing and formally approved. (CR-7)

Criteria

1. Noncompliances with the 51 DOE orders of interest to the DNFSB have approved schedules for gaining compliance.

2. Actions described in the Requests for Approval (RFA) have been adequately addressed for the facility, including both site-level programmatic and facility-level programmatic and adherence-based assessments.

3. Operations managers have reviewed the compensatory and corrective actions taken to address the identified nonconformances and have verified that they remain in place.

Approach

Record Review:

1. Review a representative sample of the records of compliance reviews for the 51 DOE orders of interest to the DNFSB.

2. For those orders where noncompliances were identified, verify the existence of approved schedules for gaining compliance.

3. Review the records that document management review and verification that compensatory measures and corrective actions remain in place.

Interviews:

None

NOTE: Representatives of the Y-12 order compliance program were interviewed during the RSS MSA with acceptable results.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 26, 1996

Shift Performance:

Select three RFAs and verify that actions described have been addressed.

Personnel contacted/position:

- G. A. Atwood, compliance manager
- J. T. Fisher, DSO resumption manager
- W. F. Mohr, mentor
- M. E. Wagoner, mentor
- J. E. Radle, D&A manager

Records & other documents reviewed:

- Evidence Files C1005 and C1006
- Request for Approvals (RFA)

CSA-2A	CSA-4	CSA-17	CSA-29A
CSA-30B	CSA-31A	CSA-32A	CSA-34B
CSA-37B	CSA-39B	CSA-40A	CSA-42B
CSA-45C	CSA-46A	CSA-47A	CSA-48A
CSA-50B	CSA-51	CSA-54A	CSA-60A
CSA-67B	CSA-68	CSA-71	CSA-80
CSA-82A	CSA-84	CSA-85B	CSA-87
CSA-88A	CSA-90	CSA-91	CSA-95
CSA-102A	CSA-103A	CSA-130A	CSA-131
CSA-132	CSA-135	CS-136	EX-5
EX-6	EX-7A	STCS-20	CSA-163
CSA-160			

- Quarterly Compensatory Measure Walkdown Reports dated 9/28/95, 10/11/95, and 1/9/96
- Compensatory Measure Assessment Program, dated 5/14/95
- 9204-2E Compensatory Measure Log Book

Evolutions/operations witnessed:

- Walked down compensatory measures for C-B2E-001, C-B2E-002, C-160, CSA-80B, CSA-137B

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 26, 1996

- Observed radiography of a mock-up assembly
- Observed criticality accident alarm system quarterly surveillance

Discussion:

1. The review of the RFAs associated with D&A activities was completed. From this review, a list of 10 RFAs was chosen to validate compensatory measures. Further, the reviewer developed a list of activities that were identified as being in place to ensure activities were conducted to meet the intent of the Order Requirements, e.g., pre-job briefings, increased supervisor reviews, and PDC training. These were not identified as compensatory measures in the RFAs.

2. The Y-12 compliance manager was contacted and requested to send the DOE-ORO approval documentation of 17 selected RFAs. The 17 selected RFAs were checked against ESAMS for schedule status. Some minor schedule deficiencies were identified. However, this was identified during the Management Self Assessment (MSA) (Observation MG-01). The only other deficiency identified revolved around which revision of the 17 selected RFAs was currently approved by DOE-ORO. Through conversations with the Y-12 compliance manager, it was determined that five of the sample RFAs were not approved by DOE-ORO. Further discussion and review of correspondence between the vice president of defense and manufacturing for LMES and the DOE-ORO office manager indicated that one of the five was identified as being required to support of resumption.

3. The compensatory measures log for D&A operations was reviewed, and two mentors and the shift manager were interviewed concerning the current status of required compensatory measures. Compensatory measures related to three RFAs were verified to be in place, and two compensatory measures related to other identified deficiencies had been audited on January 9, 1996, but were no longer required at the time of this review. Discussions related to periodic review of compensatory measures indicated that quarterly reviews were completed by the DSO mentors. These walkdowns were not accomplished with DSO management. However, the results were forwarded to DSO management for review and maintained in the 9204-2E clerk's office. The last three quarterly walkdowns were completed as required.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 26, 1996

Conclusion:

The actions taken for nonconformances to applicable DOE orders are adequately identified and scheduled and, upon receiving formal approval by DOE-ORO for those applicable to D&A operations, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by: _____ RA Team Manager Date: 2/7/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-29 A program is established to promote a site-wide safety culture. (CR-14)

Criteria

1. Personnel demonstrate an increased awareness and understanding of criticality safety.

2. All workers and supervisors attended the awareness sessions conducted following the September 22, 1994 event.

3. Personnel understand the safety messages communicated during the awareness sessions.

Approach

Record Review:

1. Review training records to verify worker and supervisor attendance at awareness sessions conducted following the September 22, 1994 event.

2. Review Occurrence Reporting System reports for OSR, criticality safety and radiological events; evaluate the effectiveness of corrective actions to prevent recurrence; and evaluate the timeliness of resolution.

3. Review the employee safety and health concerns program(s). Evaluate the appropriateness and timeliness of response to the employee.

NOTE: Review of records incident to operations (e.g., training and required reading) should also be used to verify the condition of the safety culture.

Interviews:

1. Select two employees (and their supervisors) who have submitted safety and health concerns since the September 22, 1994 incident. Determine the adequacy of response to the employee.

2. Interview two operators from each work group and three line managers, including front-line supervisors in each division to verify their understanding of the safety message communicated during the awareness sessions.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 26, 1996

3. Interview manager of safety and health concern program to determine the status of the program.

NOTE: Interviews with operators and operations supervisors incident to level of knowledge and operations should also be used to verify the condition of the safety culture.

Shift Performance:

In conjunction with other functional area activities (e.g., operations drills), evaluate satisfactory establishment of a safety culture.

Personnel contacted/position:

- J. T. Fisher, DSO resumption manager
- R. E. Schabot, Jr., Y-12 occurrence reporting manager
- C. M. Jones, Y-12 occurrence reporting staff
- M. A. McKinney, Y-12 industrial safety manager and employee concerns program manager
- S. S. Wilson, Y-12 employee concerns program staff
- J. S. Neal, DSO shift technical advisor
- J. V. Ledbetter, disassembly supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, shift manager
- M. N. Wilkerson, assemblyperson
- G. L. Gamble, assemblyperson
- D. F. Brummitt, welder
- S. M. Collier, assemblyperson
- G. W. Poole, assemblyperson
- B. L. Witt, QO alternate supervisor
- E. J. Walker,mechanical/physical properties technician
- K. F. Kesterson, supervisor materials testing lab
- M. K. Waters, radiographer
- R. W. Buchanan, inspector, dimensional inspection
- P. R. Wasilko, DSO manager
- J. E. Radle, D&A manager

Records & other documents reviewed:

- Evidence Files C701, C706, C707, and C1207
- Attendance records for sessions on awareness of safe operating requirements.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 26, 1996

- Occurrence Reporting System records
- Employee Concerns Program records

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. Reviews of evidence files identified as containing information on culture changes resulted in the following:

   a. One file indicated that Tom Fisher had the completed checklists used to interview employees to determine changes in the safety culture. Mr. Fisher did not have the records but thought that R. T. Ford had them. The records were found and were satisfactory.

   b. The survey of employees regarding the Post-CSA(9/22/94)-incident briefing indicated that the briefing was understood and that most individuals acknowledge the need for change to achieve acceptable safe operation. The specific changes were not described.

2. The records of attendance at sessions on awareness of safe operating requirements showed that all D&A employees had attended. Records also documented that the 27 Quality Organization (QO) personnel who support D&A attended the sessions on awareness of safe operating requirements conducted following the September 22, 1994, event.

3. The record of the assessment of the effectiveness of management in promoting awareness of safe operations requirements consisted of a statement that the lesson plan was examined and attendance verified. There was no comment about the adequacy of the lesson plan, and the attendance was recorded as "absentees as low as reasonably achievable". The lesson plan was in the file and consisted of a series of overhead slides that could form an appropriate promotion if well-presented.

4. Occurrence reporting records indicated that reportable occurrences were properly investigated, resolved, and reported, but final resolution was not timely. Of the four records of D&A occurrence reports sampled, all were open. Two had not been closed after periods well in excess of the 45-day due date (≈five months) for resolution, with no 10-day update of delay justification and expected date for resolution.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 26, 1996

5. Employee concerns program records showed that employee concerns were formally resolved. The majority were resolved within the 30-day guideline, but several were not resolved after 90 days. Employees sampled were satisfied with the resolution of their concerns.

6. Interviews determined that D&A employees retained the basic safety message communicated during the awareness sessions following the September 22, 1994, event, and understood the changes that were being made to implement that message. Supervisors, assemblypersons, and technicians stated that communications had improved and procedures were better, if sometimes unnecessarily detailed. However, the general knowledge of the September 22, 1994, event was narrow and limited, and this limited the understanding of the need for change. Essentially all hourly workers and first-line supervisors recall only the improper response to the question about the position of containers and a low level criticality safety violation. Other process deficiencies that led to the situation were not recalled or linked to subsequent improvement activities.

7. Interviews with QO employees also determined that they retained the basic safety message communicated during the awareness sessions following the September 22, 1994, event, and understand the changes being made. Again, the general knowledge of the event was limited, leading to a sense that not much change was needed.

8. The general absence of safety, conduct of operations, and performance deficiencies during observations of drills and evolutions indicated that the principles of an appropriate safety culture were in place in DSO and QO.

Conclusion:

Knowledge and understanding of the elements of a proper safety culture demonstrated during interviews, and operations conducted with rigor, discipline, and appropriate supervisory involvement demonstrate that a program to promote an organization-wide safety culture is working in the D&A organization. Resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by: _____ RA Team Manager Date: 2/7/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-7 There are adequate and correct procedures for operating systems and utility systems. (CR-1)

Criteria

1. Criticality Safety Approvals (CSA) and operating procedures are technically accurate, consistent with each other, and incorporate appropriate safety limits.

2. A viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Approach

Record Review:

1. Review the engineering analysis for five CSAs to verify all technical requirements have been included in the CSAs.

2. Compare each operating procedure with its associated CSA to verify they are consistent with each other.

3. Compare each operating procedure with its applicable OSR to verify it incorporates appropriate safety limits.

4. Review site and/or divisional procedure(s) to verify a viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Interviews:

None

Shift Performance:

1. Walk down each CSA to verify the conditions in the field match the conditions required in the CSA.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 26, 1996

2. Walk down the five latest procedure revisions through the approval, issuance, training, and use process to verify the procedure revisions system works correctly in a timely manner and is viable.

3. Observe at least three simulations/evolutions to verify personnel are using the latest procedures, and the procedures are adequate and correct.

Personnel contacted/position:

- J. T. Fisher, DSO resumption manager
- D. F. Turner, D&A procedure coordinator
- R. E. Hester, supervisor, quality material and equipment evaluations department
- M. K. Waters, radiographer
- B. G. Elkins, radiographer
- M. L. Spears, DSO procedures coordinator
- J. S. Murrill, DSO procedures manager
- N. Zerby, Quality Organization procedures coordinator
- K. J. Carroll, NCSD department superintendent
- G. D. Ellis, NCSD resumption coordinator
- R. D. Robinson, NCSD group leader
- D. A. Tollefson, NCSD engineer

Records & other documents reviewed:

- Evidence Files C101, C101CS, C103, C104, C104Q, C105, C015A, C105CSD, C105CSDA, C105CSQ, C105DI, C105DS, C105CSME, C105ML, C105PT, C106, C106CS, C106DI, C106DS, C106ME, C107, C116, C117DI, C117DS, C117ME, C118DI, C118DS, C118ME, C119, C120DS, C120ME, CL101-1, CL101-2, CL101Q-1, CL105-1, CL113-1, Y10-135, CL203-1

- Y/OA-6247, "Disassembly/Assembly Procedures"

- Copies of controlled procedures in 9204-2E document management center

- Radiography procedure

- CSA B2E-04, B2E-12, DI-B2E-100, PT-RAD-200

- Y50-01-B2-011, "D-38 Electropolish Rinse and Disposal, 9204-2E"

- Documentation for revision of Y50-55-PT-374, "Operation of 9MeV Linac 9204-2E"

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 26, 1996

- Procedure Y10-102, "Technical Procedure Process Control"
- Procedure Y10-189, "Document Control"
- Procedure Y10-103, "Writer's Guide"
- Procedure 60-WP-023, "Product Procedures"
- Procedure Y50-01-B2-028, "Uranium Assay Verification Using Canberra Instrumentation (U)"
- Procedure Y50-53-SO-031, "Surveillance of Criticality Accident Alarm System for Building 9204-2E"
- Y/TS-1314, "Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area"
- Procedure Y50-01-B2-043, "Electron Beam Welder Operation"
- Procedure 70-01-B2-010, "Handling Suspected or Known Enriched Uranium Low-Level Contaminated Combustible and Non Combustible Waste"
- Procedure 00-Y-169, "Electrochemical Etch Product Marking Procedure"
- CSA B2E-104

Evolutions/operations witnessed:

- See OP-2 for evolutions

Discussion:

1. Evidence File Review

   a. Three product procedures and 16 technical procedures did not incorporate CSA limits and conditions.

   b. The list of procedures in Y/OA-6247 was compared to the list in evidence file C101, latest revision dated 12/1/95. The following discrepancies were noted:

FIELD NOTES

RA ASSESSMENT FORM

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Procedures on 12/1/95 list and not in Y/OA-6247:	Y50-01-B2-049 Y50-55-PT-420 Y50-55-PT-433
Procedures in Y/OA-6247 and not on 12/1/95 list:	Y-50-01-B2-055 Y-50-55-PT-435 Y-70-101

(NOTE: Does not include four product procedures.)

c. A surveillance had been conducted on 19 randomly selected procedures from a population of 56. Thirteen different document control deficiencies were found. Only the deficiencies found were corrected. A systematic effort to find and correct the root cause was not made.

d. Evidence file C106 indicated that CSA control systems did not follow requirements of Y10-189. Examples included the following:

(1) DSO followed a "primary/secondary receipt system," while the Quality Organization did not use secondary receipt.

(2) Dimensional inspection (DI) CSAs were passed by hand from the user/holder to two or three other individuals. There was no single designated user/holder responsible for the controlled copy.

(3) Some of the controlled copies distribution lists indicated two or three copies to the same individual.

(4) C106 stated: "The NCSD distribution is only an interim step in getting the CSAs to the ultimate controlled copy destination..."

(5) The method to verify CSA revision did not follow procedure Y10-189, "Document Control," requirements (i.e. only looks at designators and five digit CSA number). Procedure Y10-189 required revision date on each page, controlled copy stamp, correct title, and number of pages.

e. Evidence files CL101Q-1, CL105-1, and CL113-1 were satisfactory.

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f. Deficiencies were noted in evidence files CL101-1 and CL101-2. CL101-1 listed all D&A (except Quality) procedures and categorized them as technical or administrative. CL101-2 used Y10-135 (3/31/95) as a basis to evaluate technical procedures (not administrative) for USQD. Examples of noted deficiencies were as follows:

(1) The "current" procedure listed in each of these two evidence files was different. Furthermore, differences existed between these two lists and those supplied the RA team as "current" (see paragraph 1.b for specifics).

(2) Procedure Y70-01-150, "General Nuclear Criticality Safety Requirements," was categorized as an administrative procedure in CL101-1. Therefore, changes to this procedure did not require a USQD per Y10-135.

(3) Procedure Y70-01-004, "Annual Surveillance of Fissile Material Activities," was changed from administrative to technical in CL101-1. However, this procedure did not appear on the other "current" procedure lists.

2. The controlled copies of procedures in the Building 9204-2E document management center were reviewed against the requirements of procedure Y10-189. The following discrepancies were identified for plant procedures:

a. The spines of the books of plant procedures were red stamped "Controlled Copy," but most individual procedures were not stamped.

b. Several procedures were stamped "Controlled Copy," but unique document identification numbers were not assigned.

c. The "Controlled Copy" stamp was being applied to the books by the document management center coordinator, rather than the releasing organization.

3. Plan of Action prerequisite PR-1, required that all procedures identified as required for operation within the next 12 months be reviewed, corrected, validated, and the most recent revision located in the workplace. The procedure used for one evolution, Y70-01-B2-010, "Handling Suspected or Known Enriched Uranium Low-Level Contaminated Combustible and Noncombustible Waste," revision date October 19, 1995, did not meet the prerequisite criteria. It was not contained on the list of procedures required for restart, dated January 19, 1996. Also, contrary to the requirements of Y10-102, Section F, it was not classified in terms of "use category."

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4. During the pre-job brief for the part marking evolution, the personnel involved became confused about the two product engineering transmittals (PET) to procedure 00-Y-169. PET revision 1, dated January 12, 1996, stated that the attached procedure was extensively revised. PET revision 2, dated January 16, 1996, contained the same sentence and an additional sentence that stated: "Revision 2 - changes effective date of document." D&A personnel were unsure if revision 2 also extensively revised the procedure. The supervisor delayed the evolution until he could confirm that it did not. This is an example of the problems caused by two procedure control systems, Y-10-102 for operating procedures and 60-WP-023 for product procedures.

   On January 24, the DSO operations procedures coordinator (OPC) stated that revisions to the affected product procedures followed procedure Y10-102 requirements, but immediate intent and non-intent changes did not follow procedure 60-WP-023 requirements. Procedure 60-WP-023 required that all changes to the product procedures be coordinated with the design agency and transmitted by PETs, rather than pen-and-ink with revision bars. Procedure Y10-102 did not require this coordination.

5. The computer database for product procedures and VTX for operations procedures were accessed. The systems enabled operating personnel to verify they had the most current revisions, but the method was cumbersome and did not include plant-level or other division procedures. For example, there were a limited number of people who could access the classified database for product procedures to determine current revisions. The shift manager had to ensure availability of these people. Then the shift manager or supervisor had to access VTX to verify the current revision for any department or division operating procedures.

   The method of verifying current revision of procedures by the Quality Organization was manual. They did not rely on a database system. In addition, the Quality Organization did not follow Y10-189 requirements for controlled procedure use (see paragraph 10). Although the Quality procedures observed in the field during this assessment were the current revision, there was great potential for personnel to use procedures that are not up to date.

6. Under the procedure control system for Building 9204-2E, working copies were supposed to be good for seven days. Five working copies of DSO procedures had been issued for 14 days and not returned or reverified.

7. During observation of electron beam welder operation, the following were noted:

   a. The procedure modification log contained an entry that procedure modification request PMR-B2-96-002, dated January 16, 1996, had been entered. However, when the supervisor checked VTX to confirm the procedure was up to date, the effective date of the change was listed as January 17, 1996. The procedures coordinator determined that

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the modification request had been written on January 16, 1996, but submitted with an effective date of January 17, 1996. The supervisor directed that the modification log entry and all changes under PMR-B2-96-002 be changed and initialled in the working copy to reflect an effective date of January 17, 1996.

b. PMR-B2-96-001, effective January 13, 1996, had been entered in the procedure in red ink. The changes were unreadable in the working copy used by the supervisor during electron beam welder operations.

8. Procedure Y50-53-SO-031 did not contain the requirements of OSR Y/TS-1314 applicable to CAAS surveillance testing. Although the OSR was referenced in the procedure, specific requirements and steps relating to Limiting Conditions of Operation (LCO) were not in the procedure. The specific OSR was 3.1.2, which included time limits for detector and alarm signal inoperability and the actions necessary to address a deficient condition.

9. An immediate non-intent change was made to Y-50-55-PT-374 on January 18, 1996. On January 22, 1996, the PMR and change package were reviewed with the OPC. The requirements of Y10-102 were being complied with in the appropriate time frame.

10. The document control process for procedures was also reviewed with the QO OPC. Several requirements of procedure Y10-189 were not being complied with, e.g., controlled copy stamp with unique identifier on each procedure, designated document management center, distribution lists, and status records.

11. During the review of the engineering analysis for five CSAs to verify all technical requirements have been included in the CSAs, the following were noted:

a. The supporting CSA calculations existed for all five CSAs, were in a controlled file, and were adequately documented.

b. After discussions with knowledgeable engineers, it was determined that all engineering analysis technical requirements were satisfactorily included in the respective CSAs. However, the "old" format did not require a conclusion/summary section for the analysis. This made the comparison of the technical requirements with the corresponding CSAs difficult and time consuming without the presence of an experienced NCSD engineer to explain the relationships. Although no firm date has been established, plans are currently underway to upgrade the CSA process. Included in the upgrade will be the addition of a conclusion/summary section in all "new" CSA analyses to capture and clarify the technical requirements resulting from the analyses.

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12. YSORT related findings included 3009.01, 3026.01, 3026.02, 3026.03, 3026.04, 3031.01, 3031.02, and 3031.03 and were not repeated as findings during this assessment. Findings written as part of this assessment involved deficiencies not enveloped by the YSORT findings (e.g., Quality Organization document control system), or where this team believed additional or more comprehensive corrective actions were required.

Conclusion:

Numerous problems exist in the control and revision of procedures, including incorporation of CSA limits and OSR requirements. The procedure system is fragmented and in a continual state of change. The governing procedure, Y10-102, had five change directives as of May 1995, was extensively revised in September 1995, and was undergoing a major revision during this assessment. The document control program, procedure Y10-189, generally provides adequate guidance for control of procedures. However, not all of the organizations supporting D&A resumption were complying with the requirements of this procedure. This assessment reviewed the procedure programs associated with the Disassembly and Storage and Quality Organizations and, to a lesser extent, Plant and Product Engineering. The problems identified in DSO were not programmatic, and once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted. The other organizations should consider more extensive corrective actions to achieve programmatic compliance and consistency with all affected site organizations.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by: _____ RA Team Manager Date: 2/7/96

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Functional Area: Operations (OP)	CRA Number/Title: OP-2 (CO-19)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-19 The implementation status of DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," is adequate for operations. (CR-12) The scope is limited to the assessment of the following chapters of DOE Order 5480.19:

Chapter I.	Operations Organization and Administration
Chapter II.	Shift Routines and Operating Practices
Chapter V.	Control of On-the-Job Training
Chapter VI.	Investigation of Abnormal Events
Chapter VIII.	Control of Equipment and System Status
Chapter XIV.	Required Reading
Chapter XV.	Timely Orders to Operators
Chapter XVI.	Operating Procedures
Chapter XVII.	Operator Aid Postings

Criteria

1. Actions described in the Request for Approvals (RFA) have been adequately addressed for the facility/activity.

2. Compensatory measures identified in the RFAs shall be employed where full compliance with the conduct of operations requirements cannot be met prior to resumption.

Approach

Record Review:

1. Review the conduct of operations portions of the RFAs and any RFA status update information to verify that implementation status is in accordance with the RFAs.

2. Review the records and paperwork associated with each DOE Order 5480.19 chapter within the scope of the core objective to verify effective conduct of operations implementation.

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Interviews:

Interview at least two operators in each work group and at least three line/shift managers, including front-line supervisors, in each division to assess their understanding of the conduct of operations principles, including any compensatory measures, in the performance of their duties.

Shift Performance:

1. Observe at least three simulations/evolutions and two drills to determine if the facility has effectively implemented conduct of operations requirements.

2. Observe at least three operators conducting their normal daily routines to verify they adequately demonstrate conduct of operations principles.

3. While observing simulations/evolutions, drills, and daily routines verify the compensatory measures identified in the RFAs are in place and effective.

Personnel contacted/position:

- R. K. Roosa, manager, nuclear operations
- E. R. Williams, Jr., assemblyperson
- E. E. Howard, assemblyperson
- M. W. Woody, assemblyperson
- C. Tate, Jr., assemblyperson
- V. K. Chandler, material controller
- W. B. Stephens, material clerk
- R. J. Collins, Jr., nuclear materials management supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, shift manager
- J. E. Radle, D&A department manager
- P. R. Wasilko, DSO manager
- J. V. Ledbetter, disassembly supervisor
- R. L. Smith, special production supervisor
- G. L. Gamble, assemblyperson
- T. J. Trapuzzano, mentor
- C. C. Turpin, assemblyperson
- D. M. Reichert, radiological controls technician
- W. F. Mohr, mentor
- C. C. Blankenship, dimensional inspection supervisor
- R. S. Hood, dimensional inspection inspector

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- M. E. Wagoner, Quality Organization mentor
- C. M. Cook, process engineer
- D. F. Brummitt, welder
- D. F. Turner, procedures coordinator
- M. N. Wilkerson Jr., assemblyperson
- R. L. Smith, special production supervisor
- R. E. Hester, supervisor, quality material and equipment evaluation department
- M. K. Waters, radiographer
- B. G. Elkins, radiographer
- K. H. Reynolds, nuclear criticality safety representative

Records & other documents reviewed:

- Evidence Files C601, C601Q, C602, C602Q, C603, C603Q, C6019, and C1203
- Y-12 Nuclear Operations Conduct of Operations Manual
- Procedure 00-Y-169, "Electrochemical Etch Product Marking Procedure"
- Procedure Y70-01-B2-010, "Handling Suspected or Known Enriched Uranium Low Level Contaminated Combustible and Noncombustible Waste"
- Procedure Y10-01-302, "Pre-Job Briefing"
- CSA B2E-12, "Container Loading Limits"
- CSA B2E-14, "Contaminated Combustibles and Noncombustibles"
- Procedure, Y50-55-DI-023, "Leitz/Zeiss/Mauser Coordinate Measuring Machines (CMMs)"
- Leitz/Zeiss/Mauser Coordinate Measuring Machines (CMM)
- Procedure Y50-01-B2-043, "Electron Beam Welder Operation"
- CSA B2E-6, "Second Floor Operations Work Stations"
- Procedure Y50-B2-025, "Walk-in Hood Startup/Shutdown"
- CSA B2E-6.1, "Walk-In Ventilation Hood"

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- Procedure Y50-01-B2-055, "Measurement Control of Scales"
- Procedure Y50-01-B2-028, "Uranium Assay Verification Using Canberra Instrumentation"
- CSA B2E-10, "Uranium Metal Standards"
- D&A Shift Managers' Log
- D&A Operator Aids
- D&A Required Reading
- D&S Standing Orders
- Dimensional Inspection Log Book
- Dimensional Inspection Standing Orders
- Procedure Y50-55-PT-374, "Operation of 9MEV Linac 9204-2E"
- Radiography procedure
- CSA PT-PL-100, "Fissile Material Loading Limits"
- CSA PT-RAD-200, "9204-2E Radiography, Handling, and Storage"
- Procedure Y70-153, "Mock Ups"
- Procedure Y50-01-B2-054, "Daily Administrative Checks"
- Procedure Y50-53-SO-031, "Surveillance of Criticality Accident Alarm System for Building 9204 2E"
- C5 disassembly procedure

Evolutions/operations witnessed:

- Part marking
- Contaminated combustible move

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- Functional test/daily calibration check of the Mauser Coordinate Measuring Machine
- Electron beam welder operation
- Walk-in hood, scales, and Canberra operations
- Shift manager morning walk-through
- Shift manager morning brief
- Special production crew brief
- Operations manager meeting with special production crew
- Radiography of a mock up unit (or assembly)
- Daily administrative checks
- Quarterly surveillance of Building 9204-2E Criticality Accident Alarm System (CAAS)
- C5 mockup disassembly

Discussion:

1. The manager, nuclear operations stated that the Conduct of Operations Manual was the way people were to do business at this facility. Workers at every level of the organization were to use the manual if they had an operational question. The Conduct of Operations Manual was written to apply to day shift operations with the statement that a second shift may be operated during periods of high demand. The Conduct of Operations Manual was present in the workplaces visited and organizational managers were cognizant of its contents.

2. An activity involving moving a bag of contaminated combustibles from one fissile storage array (inside a radiological high contamination area) to another fissile storage array (outside the area) was observed. The pre-job brief was conducted in accordance with procedure Y10-01-302. Requirements of CSAs and procedures were complied with. Radiological controls procedures were complied with, including dress out, monitoring, and survey. A question arose concerning the use category for procedure Y70-01-B2-010, which was not indicated on the procedure. The supervisor thought it was category III, but said he was not sure. The index of the procedure listed the category as "N/A." Procedure Y10-102, "Technical Procedure Process Control," required each procedure to be categorized as I, II, or III.

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3. During electron beam welder operation, the supervisor led a pre-job briefing, and directed the electron beam welder operation. The process engineer demonstrated excellent knowledge of electron beam welding. The welder was proficient in equipment operation.

4. During Canberra, walk-in hood, and scale activities, the following were noted:

   a. There were no calibration stickers on the air flow meter or either of two manometers checked to determine whether proper air flow existed to permit hood operations. When asked, the process engineer, who had approved the walk-in hood ventilation velocity performance, stated that calibration of meters, gages, etc., was not required unless the instruments were used to take weapons data. This issue was raised previously by YSORT, and has not been resolved.

   b. The operations listed above took place in a posted radiological high contamination area. Personnel involved complied with all requirements of applicable Radiation Work Permits (RWP).

   c. The supervisor conducted the pre-job briefing, directed each of the three operations observed, and led a post-job critique. His involvement directly contributed to the timely and proper completion of the operations.

5. On one occasion, when the shift manager went to the fax machine to retrieve the PSS shift turnover, he found a fax stating that no shift turnover from the shift manager to the PSS had occurred the previous day. The turnover sheet was in the fax machine to be sent. However, for some reason, it was not. The shift manager did not verify transmittal of the turnover with the PSS, nor did the PSS contact the shift manager after hours when he did not receive the turnover.

6. Several required reading cover sheets indicated the reading had not been completed prior to the required completion date. Some were not explained, some were explained adequately, and some were annotated "not aware of."

7. All personnel had read the required reading explaining compensatory actions currently in place. Mentors were observed to be present for those evolutions that required their presence.

8. During turnover from operations manager to shift manager, the operations manager advised the shift manager of the status of the plant and work that had begun since the shift manager last held the watch. Upon completion of the turnover, the operations manager pulled a slip of paper from his pocket, which contained the names of the people performing the work, and handed it to the shift manager, rather than recording the information in the log.

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9. Radiography of a mockup assembly was observed:

   a. Radiography of the mockup assembly was scheduled and started at 10:00 a.m. on January 18, 1996. During this evolution, the responsible supervisor from the quality materials and equipment evaluation department conducted a comprehensive pre-job briefing of all parties associated with the activity. All procedures and associated CSAs were validated as current and discussed in detail.

   b. Upon commencement of the operation, the Category II procedures were adhered to, and the supervisor reminded all personnel of the safety aspects of the job as it was conducted. The required Strategy III mentor was present and certified in accordance with the Y-12 Mentor Program Description. However, the radiography supervisor said he was not aware of the certification letters and how to verify the mentors qualifications. The mentor did respond with a copy of the certification letter signed by the manager, nuclear operations. During the performance of the radiography, all required signs were verified correct.

   c. The radiography procedure was followed, as written, to the point where a fault alarm on the Linac control panel was identified. This alarm was abnormal. However, the procedure did not include this alarm, and the activity was correctly stopped. The supervisor told everyone present that the procedure needed modification, and that maintenance would be required to fix the problem. Some confusion occurred when the Strategy III mentor was concerned that NCSD needed to be called to determine if a CSA violation or unsafe condition existed. The supervisor of radiography said the unit was "in process," therefore the requirements of PT-RAD-200 were not violated. The NCSD representative was summoned and verified that the unit and the X-ray room CSA were as required. The Linac maintenance was completed, and the appropriate procedure changes were made by the close of business. The radiography work was successfully completed for the following day.

10. Two supervisors were observed performing daily administrative checks in Building 9204-2E. One supervisor delayed completion of his checks because a fork lift was in use and the keys could not be removed, as required by his check sheet. He signed the check sheet before he had received the keys, but did not turn it in to his shift manager until he had received the keys and completed the check sheet.

11. Procedure Y50-55-DI-023, "Leitz/Zeiss/Mauser Coordinate Measuring Machines (CMMs)," did not include all actions necessary to perform dimensional inspection using the CMMs. When asked, the dimensional inspector stated that warm up of the CMM was performed by a computer program set up by programmers, and that warmup requirements were not in any procedure. Startup actions were also not in any procedure. For dimensional inspections, an operator

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instruction specific to each job was provided. Operator instruction F-0801 was reviewed. The three-page document contained procedural steps and drawings, but no review or approval signatures. When asked, the inspector said that improper performance of the operator instructions, or failure to properly perform CMM warmup and startup actions, could affect the accuracy of measurements. The inspector added that the sequence of actions sometimes became confusing.

12. A C5 mockup disassembly was observed. The evolution took place in a posted radiological high contamination area also posted as a respirator area. The following items were noted:

    a. Neither of two mentors were qualified to wear respirators. The operations manager stated that the mentors could not fulfill their responsibilities under mentor program Strategy III until they were respirator qualified.

    b. As components were removed, part numbers were read initially by an assemblyperson wearing a respirator to another assemblyperson maintaining inventory records. The second assembly person had difficulty understanding the numbers as they were read. Later in the evolution, repeatbacks were initiated, which reduced the opportunity for errors in the inventory process.

    c. The disassembly supervisor in charge held a thorough, to-the-point pre-brief during which all aspects of the evolution were covered. During disassembly operations, he accomplished the procedure with two assemblypersons and a radiological controls technician using a reader-worker format. The supervisor's direction throughout the evolution was paramount in the successful and timely completion of disassembly.

    d. Some radiological controls deficiencies and problems occurred. These are discussed in OP-3 (CO-20).

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Conclusion:

With appropriate supervisory and mentor involvement, operations were conducted with rigor and discipline. This demonstrates that conduct of operations implementation is at a level sufficient to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by: _____ RA Team Manager Date: 2/7/96

Form 1

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RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-3 (CO-20)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-20 Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements. (CR-14)

Criteria

1. Personnel exhibit awareness of safety-related policies and procedures necessary for daily operations.

2. Personnel exhibit awareness of requirements for safe operation as reflected in CSAs, OSRs, and appropriate operating procedures.

Approach

Record Review:

None

NOTE: Worker training on safety, health, and environmental requirements is addressed by CO-13 and CO-16.

Interviews:

None

Shift Performance:

1. During evolutions observe that personnel comply with radiological controls and radiation work permits.

2. During evolutions observe that personnel exhibit compliance with CSAs used as procedures.

3. During evolutions observe that personnel exhibit compliance with Safety Work Permits, other related permits, and safety requirements in procedures.

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Personnel contacted/position:

- See OP-2

Records & other documents reviewed:

None

Evolutions/operations witnessed:

- See OP-2 for evolutions

Discussion:

1. During movement of contaminated combustible waste and walk-in hood, scales, and Canberra operations, all involving work in a radiological high contamination area, workers, supervisors, and mentors complied with all requirements of Radiation Work Permits (RWP). They exhibited knowledge of, and compliance with, accepted radiological practices.

2. The following radiological controls problems occurred during performance of the CAAS quarterly surveillance:

   a. Daily source checks were not recorded on two alpha and two beta-gamma friskers at the exit of the radiological contamination area on the first floor of Building 9204-2E.

   b. Step-lid cans for used anti-contamination clothing were positioned inside the radiological contamination area. The last can to be used was for gloves, tape, and other miscellaneous waste. When exiting the contamination area, personnel could not remove their second surgeon's glove and deposit it in the can without either raising and holding the lid with an unprotected hand, or stepping back across the contamination area boundary to operate the foot mechanism.

3. During performance of the quarterly CAAS surveillance test, two individuals left an area being tested (where a bicron meter was being monitored to confirm that no actual criticality occurred) for a different area of the building. The shift manager stopped testing until he had confirmed the two individuals had reached a location where another bicron meter was being monitored.

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4. During C5 mockup disassembly activities, the following issues were noted:

   a. A pallet and shipping container (clean) were transferred into the radiological high contamination area from the buffer zone. This was accomplished by use of an uncontaminated forklift. The forklift tines entered the high contamination area and set down the pallet. Upon backing out of the area, no survey of the forklift was conducted.

   b. The pallet and mockup were moved to the area where disassembly was to occur by a forklift located in the radiological high contamination area. After the mockup was removed, its shipping container was placed in a storage array, and the pallet was placed near the transfer point to the buffer area. The pallet was placed on blotter paper.

   c. Approximately two hours later, discussions concerning removal of the pallet from the controlled area were conducted between the two health physics (HP) technicians associated with the C5 mockup disassembly. They determined that the pallet should be removed, and slid it under the boundary chain into the clean area.

   d. From the time the pallet was placed in the buffer area, until HP surveyed the pallet for release, numerous facility personnel walked on and moved the pallet.

   e. The wooden pallet was surveyed by HP and released. Had the pallet been contaminated, it would have been difficult to determine which personnel came in contact with it. Further, at the time of the transfer across the boundary, no HP coverage was available on the buffer-zone side. The HP technician within the radiological area had to monitor out and then survey the pallet approximately 45 minutes later.

   f. When the HP technician was questioned concerning the forklift that crossed the boundary, she stated that she thought a survey was going to be performed, but someone else must have decided against it.

5. No evolutions where CSAs were used as procedures were performed. Nineteen procedures remain under revision to incorporate CSA limits and conditions.

6. No evolutions were observed where Safety Work Permits (SWP) or other permits were required. No violations of safety requirements in procedures occurred.

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Conclusion:

Awareness of and compliance with safety, health, and environmental protection requirements (including radiological controls) are satisfactory to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by: _____ RA Team Manager Date: 2/7/96

Form 1

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RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-4 (CO-22)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-22 A routine operations drill program, including program records, has been established and implemented. (CR-9)

Criteria

1. A drill program for routine operations has been established to ensure operator readiness and knowledge of appropriate response to indications.

2. The routine drill programs at the facilities are based on a graded approach driven by the specific facility hazard categorization analysis.

3. Typical drills will have equipment failure, miscalibration, process upset, or unexpected conditions scenarios.

Approach

Record Review:

1. Review and assess the adequacy of drill procedures and drill guides for operations and quality activities in 9204-2/2E.

2. Review and assess the adequacy of program records.

3. Review facility drill programs to verify they are based on a graded approach driven by the specific facility hazard categorization analysis.

4. Review drill scenarios to verify they contain equipment failure, miscalibration, process upset, or unexpected condition scenarios.

Interviews:

Interview the managers of the drill programs for operations and quality to assess the adequacy of methods used to select drill scenarios, drill participants, and to determine the status of the program.

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Shift Performance:

1. Observe and evaluate at least two operations drills, including pre-drill and post-drill activities, applicable to D&A operations.

2. Observe and evaluate at least two operations drills, including pre-drill and post-drill activities, applicable to quality operations in 9204-2/2E.

Personnel contacted/position:

- M. A. Schlitz, organization drill coordinator
- W. T. Thomas, facility senior drill monitor
- E. E. Howard, drill monitor
- E. R. Williams, drill monitor
- J. W. White, drill monitor
- S. H. Jackson, drill monitor
- G. M. Nelson, fire patrol team member
- J. E. Newton, fire patrol team member

Records & other documents reviewed:

- Evidence files C801, C802, C803, and CL805-1
- Procedure Y10-01-210, "Conduct of Drills"
- Drill Guide 2-0003, "Vault Type Room Abnormal Condition Response"
- Procedure Y50-01-B2-045, "Fire System Inoperability - 9204-2 and 9204-2E Fire Patrols"
- Drill Guide 2-0004, "Fire System Inoperability - Setting Up Fire Patrol 9204-2 and 9204-2E"

Evolutions/operations witnessed:

- Verification of CSA in Vault Type Room
- Establishment of fire patrol

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RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-4 (CO-22)	Date: January 26, 1996

Discussion:

1. Procedure Y10-01-210 stated in paragraph V.C.2 that drill guides shall reference job task analysis (JTA). None of the eight approved drills referenced JTA data. The existing drill guides were for relatively simple abnormal operations, e.g wrong signs, frisker alarm, etc., and did not consider JTA data.

2. There were eight approved drills. Six of the eight were revision A, the other two were revision 0. The operations drill coordinator (ODC) stated that revision A was the first revision. Training management system (TMS) records showed many examples where personnel completed drills before the effective date of the guide (Revision A). The explanation was that personnel performed to Revision 0.

3. The "List of Personnel Required to Complete a Drill" was contained in evidence file C803. The list was not complete, in that one DSO person (W. B. Stephens) was not on the list. Also, seven Quality Organization personnel were missing. There were no other organizations on the list. According to TMS printouts, all personnel on the list have completed at least one drill. However, the distribution of drills was very skewed. The table below shows the number of personnel completing each of the eight drills:

TMS Module	13704	13705	13706	13707	13708	13709	13710	13711
Drill Guide	C-0001	C-0002	C-0003	C-0004	C-0005	C-0006	C-0007	C-0008
#Completing	40	9	0	7	10	0	4	0

That no one completed 13706 (C-0003), until it was specifically requested by the RA team, was significant. This drill involves abnormal conditions in vault-type rooms (VTR), including CSA violations.

4. The RA team observed a drill conducted according to drill guide No. 2-0003, "Vault Type Room Storage Abnormal Conditions Response," on January 18, 1996. The observation included a pre-drill briefing and post-drill critique. Both were conducted by the facility senior drill monitor (FSDM) in accordance with procedure Y10-01-210. The drill was conducted according to the drill guide, and the participants correctly performed the expected actions. Some of the more significant observations raised by the drill observers and the RA team during the critique included the following:

   a. More realism should be introduced into the drill, both with the drill props and the initiating event.

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RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-4 (CO-22)	Date: January 26, 1996

b. A facility PA announcement should be made that a drill is in progress and non-participating personnel should be restricted from the area.

c. Protocols for verbal communications (telephone and radio) should be developed to avoid compromising sensitive information.

d. Drill monitors should be given assignments early in the pre-brief to enable them to better prepare.

e. The number of active participants should be limited to the least number according to minimum staffing requirements.

5. The Management Self Assessment (MSA) concluded the criteria were <u>not</u> met for CO-22, "Operations Drill Program."

Procedure Y10-01-210 defined drills as "...evaluated response to simulated abnormal operational situations." However, a memo in evidence file C801, which justified a graded approach to the drill program, stated that drill guides for normal D&A activities would be developed. The restart Plan of Action (POA) required a routine operations drill program. Some people were interpreting this to mean a drill program for routine operations, as opposed to routinely scheduled drills on abnormal situations.

6. The pre-brief for a drill requiring establishment of fire patrols began, but was terminated when the shift manager noted that the OSR referenced in the procedure was revision 0, and revision 1 was the effective version.

7. Three days after being held in abeyance pending revision of procedure Y50-01-B2-045, a drill requiring establishment of fire patrols because of inoperability of Building 9204-2E fire cycle system #4 was conducted. Pre-briefing of drill monitors by the facility senior drill monitor (FSDM) with the organization drill coordinator in attendance, conduct of the drill, and critique were observed. Performance of the drill team in initiating, monitoring, and critiquing the drill was satisfactory. In particular, the team identified that the process of determining the fire patrol team leader and assigning team members, determining qualifications of team members, and assigning portions of areas when more than one team was necessary was cumbersome and in need of refinement to ensure that the one-hour requirement of the OSR was met when establishing patrols, particularly during off-hours. Problems noted during the drill by the observer included the following:

a. The drill commenced with a call from the PSS to the operations manager notifying him that fire cycle system #4 was (simulated) inoperative. The initial response was to begin

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RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-4 (CO-22)	Date: January 26, 1996

establishing fire patrols, including verifying their qualifications current and ensuring that the copy of the procedure being used to establish the patrols was the latest version. Nine minutes elapsed before the operations manager had an announcement made to stop welding, burning, or other work that promotes conditions favorable for a fire.

b. Wording of the announcement to stop hot work was in accordance with posted generic drill announcements on the wall in the office area. These standard announcements were not approved or controlled as an operator aid.

c. Two fire patrol team members entered a room posted as requiring safety glasses. They did not wear safety glasses.

Conclusion:

The drill program is in its initial stages and will improve with time and experience. Management attention is needed to effect the necessary improvements and to emphasize its importance to the worker. YSORT finding, DOE 3022.01, stated that the drill program has not been effectively implemented. The deficiencies noted during this assessment, and during the MSA and YSORT efforts, should be factored into program improvements. However, the program is adequate to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by: _____ RA Team Manager Date: 6/7/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-5 (CO-28)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-28 An adequate start-up or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators. (CR-10)

Criteria

1. Appropriate restart programs have been developed to demonstrate that the identified processes are fully operable to perform their intended functions.

2. Verify the appropriate calibrations, preventive maintenance, and restart leak checks, etc., have been completed.

3. Restart program documents the operability of the equipment that has been in the stand down mode, the usefulness of the procedures, and the relevance of the training to the intended use of the restarted equipment.

Approach

Record Review:

1. Equipment that has been in the stand-down mode is identified; equipment to be restarted is identified; and equipment to be taken out-of-service is identified.

2. For equipment to be restarted, verify that required calibrations, preventive maintenance, and restart leak checks have been completed.

3. For equipment that is to be restarted, verify that operations procedures have been reviewed and revised as necessary to make them useful.

4. Verify that training has been conducted to the intended use of the restarted equipment.

5. Verify restart programs documents the operability of the equipment that has been in the stand down mode.

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Functional Area: Operations (OP)	CRA Number/Title: OP-5 (CO-28)	Date: January 26, 1996

Interviews:

None

Shift Performance:

1. Walk down the list of equipment that is not to be restarted and verify each piece is tagged out-of-service.

2. In conjunction with CO-7, observe dry runs of five procedures on equipment to be restarted to determine acceptable performance of equipment, procedures, and training.

Personnel contacted/position:

- D. E. Hunnicutt, facility support manager
- J. S. Neal, shift technical advisor
- E. W. Wade, technical support, maintenance coordinator
- C. A. Begley, quality organization
- R. S. Hood, dimensional inspector
- G. S. Dailey, assistant maintenance coordinator

Records & other documents reviewed:

- Evidence files C1101 and C1102 series
- Procedure Y50-01-B2-025, "Walk-in Hood Startup/Shutdown"
- Procedure Y50-01-B2-043, "Electron Beam Welder Operation"
- C5 disassembly procedure
- Procedure 00-Y-169, "Electrochemical Etch Product Marking Procedure"

Evolutions/operations witnessed:

- Electron beam welder operation
- Handling contaminated combustible and noncombustible waste
- Radiography

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RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-5 (CO-28)	Date: January 26, 1996

- Walk-in ventilation hood operation
- C5 mockup training unit disassembly
- Operation of Mauser
- Walk down of dimension inspection and ultrasonic areas in MAA
- Walk down of Building 9204-2E, second floor MAA

Discussion:

1. The following discrepancies were noted during a walk down of the dimensional inspection and ultrasonic areas in B2E:

   a. The crane lift system had a deficient material condition (DMC) tag that referenced maintenance job request (MJR) YJ-699806, dated January 10, 1996. The maintenance coordinator said it was a configuration control problem in that the vacuum pumps were not capable of maintaining the vacuum required by the procedure. He said all crane vacuum lift systems were similarly affected.

   b. Comparator DG-0594 had an up-to-date electrical inspection tag. Small comparator DI-B2E-SML-COMO had no similar electrical inspection sticker. The absence of the electrical inspection sticker could not be explained by Quality Organization personnel present.

   c. The maintenance coordinator said they had recent problems with temperature and humidity control in the area. It was necessary to keep the door to the rest of the MAA open to maintain environmental conditions. He said there were several MJRs on the Kathabar system (HVAC), but it was not considered restart equipment because it served other areas in addition to the MAA.

   d. In the ultrasonic area, several pieces of equipment had expired inspection stickers. This equipment was identified as D&A restart equipment in evidence file C1101PT. Examples of the equipment included tank-109 lab scanner and the ultrasonic equipment connected to gauge NDT0204 (cathode ray tube), pulser, receiver, and gate module).

   e. In the ultrasonic area, numerous lifting fixtures were identified that were not on the restart equipment list, but did not have tags indicating they could not be used. Lifting fixtures included ET&I numbers 8760, 7941, 9206, 8510, 8093, 8512, 7666, and 7999. Also,

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RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-5 (CO-28)	Date: January 26, 1996

there were numerous pieces of electronic equipment in the inspection lab that were not on the list and not tagged.

2. The following discrepancies were noted during a walkdown of the list of DSO equipment required for restart (from evidence file C1101DS) on January 22, 1996:

Backfill station B5-205	not on list/not tagged
Leak test station LT-280	not on list/not tagged
Fill station FS-227	not on list/not tagged
Welder-244	not on list/not tagged
West EB welder	not on list/not tagged

3. A memorandum, dated January 22, 1996, provided an update on the latest MJRs tied to D&A restart. It included 18 line items, including six on the Kathabar system. Other significant MJRs included replacement of a fan motor necessary to support the electropolisher, bad diaphragms on the environmental room, and repair of polycold tanks that are necessary to support leak test units.

Conclusion:

The operability of the equipment necessary to support D&A restart has not been adequately demonstrated. Corrective maintenance is required on numerous pieces of equipment and systems in order to prove operability. The Kathabar system is necessary to maintain strict temperature and humidity conditions in the MAA, yet is not included on the restart list and has numerous MJRs outstanding. In addition, all equipment not planned on being restarted has not been tagged out-of-service. These issues are addressed as prestart findings. Once prestart findings are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by: _____ RA Team Manager Date: 2/7/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-4)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-4 There are adequate and correct safety limits for operating systems. (CR-1)

Criteria

1. The OSR for Building 9204-2/9204-2E is technically accurate and consistent with the physical facility configuration.

2. Designated equipment and systems are present as described in the OSR.

3. The OSR can be technically accomplished.

4. Compliance with the OSR is verified.

Approach

Record Review:

1. Review the Building 9204-2/9204-2E OSR for technical accuracy.

2. Compare the Building 9204-2/9204-2E OSR against current facility drawings to verify consistency.

3. Ensure surveillance requirements and LCO actions of the OSR are covered in approved procedures.

4. Review surveillance records to verify surveillances are up to date and demonstrate the OSR requirements are being met.

Interviews:

None

Shift Performance:

1. Walk down Building 9204-2/9204-2E and verify facility equipment and systems are present as described in the OSR.

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RA ASSESSMENT FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-4)	Date: January 26, 1996

2. Observe at least three simulations/evolutions covered by the OSR to verify they can be technically accomplished and operators/managers are in compliance with the OSR.

Personnel contacted/position:

- D. M. Nabors, shift manager
- G. W. Kerley, nuclear criticality safety coordinator for DSO
- G. L. Lovelace, DSO plan-of-action coordinator
- J. M. Stooksbury, DSO engineer
- G. L. Gamble, assemblyperson
- M. R. Seavers, shift technical advisor
- G. M. Nelson, administrative assistant to the operations manager
- B. C. Brown, head of fire protection engineering
- J. S. Neal, shift technical advisor
- L. J. Fenstermaker, fire captain

Records & other documents reviewed:

- Evidence files C108, C108A, C108TID, C108TIF, C108TIP, C108T2D, C108T2Q, C108T3D, C108T3DA, C108T3Q, C107T3QA, CL108A-1, C110, C114, C114A, CL110-1
- CSAs B2E-04 and B2E-12
- Drawings DSM920402A001, DSM920402A002, DSM920402A003, DSM920402A004, DSM920402A005, DSM920402A006, DSM92042EA001, DSM92042EA002, DSM92042EA003, DSM92042EA004, E2E92042EA094, E2E92042EA095, E2E9204A845, E2E9204A846, E2E92042EA099, E2E92042EA100, E2E92042EA101, M2E92042EA104
- Y50-43-SO-031
- Procedures ESPS-FO-003, ESPS-FO-004, ESPS-FO-005, ESPS-FO-006

Evolutions/operations witnessed:

- Verified implementation of two CSAs in the field
- Walked down the fire protection and CAAS systems in Building 9204-2/2E to verify consistency between the facility equipment and the current OSR and facility drawings.

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RA ASSESSMENT FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-4)	Date: January 26, 1996

- Performed a simulated walkthrough of the appropriate LCO actions for a fire protection system activation or pipe rupture.
- Observed a modified (4 zones out of 33) quarterly surveillance test of the criticality accident alarm system (CAAS) for Building 9204-2E.
- Observed a modified (system #1 only) quarterly surveillance test of the firecycle sprinkler system in Building 9204-2E.

Discussion:

1. Evidence File Review

   An evidence file review was performed to determine if the CAAS and fire protection procedure lists, training lesson plans, and other documentation were current and consistent with the approved OSR for 9204-2/2E (Y/TS-1314, Revision 1). Fourteen of the 16 evidence files were satisfactory.

   Additional documentation was needed in C108TIF to confirm that the fire protection training lesson plans (dated 8/4/95) had been reviewed for consistency and accuracy with Revision 1 of the OSR (dated 9/18/95).

   The OSR Surveillance Procedure Matrix and "Last/Next" Performance Date List (in C110) were not current. Several procedure changes and monthly/quarterly surveillances had occurred since these documents were last updated in August 1995.

   A review of the C110 OSR Procedure Matrix (dated August 28, 1995) versus Revision 1 of the OSR (dated 9/18/95) had not been documented and included in the evidence file.

2. CSA Walkdown

   Twenty-five arrays were walked down by RA team members. Container usage and labelling were found to be consistent with the requirements of CSA B2E-12. However, several discrepancies or inconsistencies were noted regarding the requirements documented in CSA B2E-04. They were as follows:

   a. At least six out of 25 locations identified in the CSA B2E-04 were misleading. Although consistent with the criteria established by engineering (e.g., upper left corner of the array grid depicted in drawing M2E92042EA014), significant differences between the actual and designated locations exist in some cases, which were considered inappropriate by operations personnel.

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-4)	Date: January 26, 1996

b. The intent of B2E-04 was to minimize operator error through the use of highly visible, local signs that clearly stated the limiting conditions for each array. Accordingly, the operators would have access to all the limits without having to refer to the CSA. However, many of the arrays described in the CSA indicated "none" regarding posted area signs. A footnote stated that "none" meant the requirements for CSA Sign #1 were automatically in effect. This practice placed the burden of remembering the CSA requirements on the operator and was inconsistent with the intent of the CSA. Local posting at all arrays would reduce the operator's reliance on the CSA or memory, which minimizes the chances of error. The use of "none" was standard practice in other CSAs involving arrays. When asked, several of the facility personnel in the area were unaware of the requirements for arrays without signs.

During a tour with an assemblyperson, the individual explained the requirements for bagging, storing, stacking, etc. in each array. Explanations were always consistent with the CSA.

One vault type room (VTR) had a sign that prohibited "assembly-type birdcages." When asked what these were, both the shift manager and the assemblyperson said they did not know. The shift manager later said they were a special kind of birdcage, but no birdcages were allowed in the VTR. The posted sign did not exclude all birdcages.

3. OSR/Surveillance Program

A review of the OSR (Y/TS-1314, Revision 1) verified accuracy and consistency between this document and equipment in Building 9204-2E.

A review of the surveillance program and records verified that the surveillances were current, consistent with the OSR, and properly documented. The method used for tracking surveillance was found to be satisfactory (e.g., no late or omitted surveillance). The historical surveillance records (since March 1995 when D&A assumed responsibility for their control) were found to be satisfactorily complete, accurate, and retrievable.

4. Drawings

Accurate CAAS electrical drawings did not currently exist, but efforts were underway by central engineering to "as-built" these drawings. The planned completion date was February 9, 1996. The mechanical drawings for each CAAS monitoring and alarm station were found to be acceptable during the walk downs.

Similarly, the electrical drawings for the fire protection system were being collected by central engineering for turnover to D&A. Plans for updating them were under development, but no date

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-4)	Date: January 26, 1996

(other than a prestart agreement) had been established. The piping/mechanical drawings were being "as-built" with completion scheduled by March 1, 1996.

The CAAS and fire protection "as-built" drawing issue was previously identified in YSORT finding 3021, and resolution of this finding should satisfactorily address the issues.

5. CAAS Quarterly Surveillance Test

The "zone maps" used by the surveillance team to locate audible and visual alarms were not always accurate or optimally established. The following examples of zone map deficiencies were noted:

a. Drawing number E2E92042EA100 showed only two audible alarms in Zone #8 to be verified during the test. While examining the two audible alarms in Zone #8 prior to activation, the surveillance team noticed an adjoining room with an additional audible alarm that appeared on drawing number E2E92042EA100 for Zone #11. Because of the current layout of the room, this alarm could not be readily accessed from Zone #11 by the responsible surveillance team during test of the CAAS. Removal of this alarm from Zone #11 and adding it to Zone #8 would be prudent.

b. During a pre-test briefing by the zone leader, the Zone #21 surveillance team was verbally instructed to also check speaker #1, which is in the area but currently shown on drawing number E2E92042EA099 for Zone #16, i.e., this speaker did not appear on drawing number E2E92042EA101 for Zone #21. The rationale for this deviation was that most of the alarms in Zone #16 were inside the material access area with speaker #1 as a notable (outside) exception. Therefore, during a surveillance test, the Zone #16 surveillance team would have a difficult time accessing Speaker #1, but the Zone #21 team would not.

c. Discussions with several surveillance team members and observers who participated in past tests indicated that other drawing deficiencies had been noted but not corrected. The general consensus was that the drawings were not properly "walked down" and should be reviewed (in the field) by engineering and facility personnel for logical zone layout and accuracy.

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-4)	Date: January 26, 1996

6. Firecycle Sprinkler System Quarterly Surveillance Test

A "modified" quarterly firecycle surveillance test in Building 9204-2E was performed to demonstrate that this test could be satisfactorily accomplished consistent with the requirements in the OSR. The following were noted:

a. Procedure ESPS-FO-006, "Monthly, Quarterly, and Annual Fire Protection Surveillance - Firecycle Sprinkler System in Building 9204-2E," was used to perform this test. A review of the procedure verified that the OSR requirements (such as a system pressure drop of less than or equal to 10 psi) were satisfactorily included in the procedure.

b. Normally, two Building 9204-2E systems (i.e., system #1 and System #2) were tested together using this procedure. However, it was understood by both facility operations and fire protection personnel that a "modified" test would be performed (i.e., system #1 only) for demonstration purposes. The shift manager confirmed that he did not intend to use this test to satisfy the quarterly surveillance test requirement.

c. The procedure did not allow for a single system test. Neither operations nor fire protection department personnel (at any level in the hierarchy) challenged the appropriateness of using this procedure for performing a single system test.

d. Although not currently required by the procedure, but considered a good conduct of operations practice, a permanent member of the operations staff did not witness the test or visually confirm the system's return to safe service after the test was completed.

e. Similar deficiencies exist in procedures ESPS-FO-003, ESPS-FO-004, and ESPS-FO-005.

7. CSA PT-RAD-200, dated August 16, 1995, for radiography in Rooms 125, 126, and 127 in 9204-2E, was walked down. During this walkdown, the following issues were identified:

a. The CSA referred to four QE procedures and future new activities. The supervisor for the quality materials and equipment evaluations department was asked what "future new activities" meant. He said this was in the CSA in case something special would need to be radiographed in the future. Then the organization would be able to do it in accordance with this CSA.

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RA ASSESSMENT FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-4)	Date: January 26, 1996

b. In the requirements section of the CSA, the terminology "etc." was used to describe types of containers (section 2.b.) approved for floor storage. In the clarifications section, "etc." was used to describe the equipment used to transfer components into or out of the X-ray area. The radiography supervisor was confused about the meaning of the use of "etc." He said it probably referred to CSA PT-PLT-100, "Fissile Material Loading Limits." The CSA should be specific and not contain nebulous terminology.

c. The signs required by the CSA were correct and in appropriate locations.

8. CSA DI-B2E-100, "Fissile Work Stations and Fissile Storage Arrays," contained vague wording in two areas:

a. Under proposed activity, "Various gages, micrometers, comparators, scales, etc., may be used at the fissile work stations during the dimensional inspection operations."

b. Under clarification, "Tools, gages, etc., may be left unattended on the fissile work stations."

Conclusions:

The CSAs are sometimes misleading when describing the existing field configuration(s) or allow conditions to exist that force the operator to rely on the CSA document or memory to accomplish the task in a safe manner. The two QO CSAs reviewed indicate a lack of significant improvement since the September 22, 1994, event. Although efforts are currently underway to update the CAAS and fire protection mechanical and electrical drawings, some completion dates have not been established as of the date of this assessment. Additionally, problems with some fire protection surveillance test procedures exist. Once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: H. A. Oliver III G. P. Zagursky	Approved by: _____ RA Team Manager Date: 2/1/96

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-2 (CO-10)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-10 A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, safety-related process systems, and safety-related utility systems. (CR-5)

Criteria

The status of the safety systems and safety-related process system components in the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs is satisfactory.

Approach

Record Review:

Review maintenance Recall-A Program and ET&I and ICP inspection and calibration program records to verify safety systems and safety-related process system components have been inspected/calibrated and are within the required specification and periodicity.

Interviews:

None

Shift Performance:

1. Compare safety systems and safety-related process system components in the field against maintenance Recall-A Program and ET&I and ICP inspection and calibration program records to verify records reflect installed components.

2. Verify safety systems and safety-related process system component inspection/calibration sticker dates in the field match the dates in the inspection/calibration records.

Personnel contacted/position:

- E. W. Wade, DSO maintenance coordinator
- J. S. Neal, shift technical advisor
- G. M. Nelson, administrative assistant to the shift manager
- D. M. Nabors, shift manager
- H. S. Hackler, fire chief

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-2 (CO-10)	Date: January 26, 1996

- L. J. Fenstermaker, fire captain
- L. E. Randolph, fire protection reports and data clerk
- C. R. Nichols, FMO supervisor
- R. A. Wilder, fire protection procedure analyst
- E. L. Hockett, fire protection operations manager

Records & other documents reviewed:

- Evidence files C201, C204, C206
- Y/TS-1314, "Operational Safety Requirements for Building 9204-2/2E Material Access Area," Revision 1
- Procedures ESPS-FO-013, ESPS-FO-014, ESPS-FO-015, ESPS-FO-016, ESPS-FO-018, ESPS-FO-019, ESPS-FO-020

Evolutions/operations witnessed:

- Walked down the fire protection and CAAS systems in Building 9204-2E to verify consistency between the process system components in the field and the appropriate calibration records.
- Verified the inspection/calibration sticker dates were accurate and consistent with the calibration records.

Discussion:

1. Each of the Building 9204-2E fire protection system LCO pressure gauges were properly labeled with calibration stickers. Additionally, all of the sticker dates were satisfactory and consistent with the calibration records. To assist in proper identification of safety related components, laminated labels were securely attached to each fire protection system component and provided useful information not normally found on labels, such as whether or not the component was "LCO" related.

2. Monthly, quarterly, and annual inspections of the Building 9204-2E fire protection system were current, satisfactorily tracked, and prominently displayed on a "white board" outside of the fire chief's office for easy use and reference.

3. Each of the Building 9204-2E CAAS system monitors were properly labeled with calibration stickers. Additionally, all of the sticker dates were satisfactory and consistent with the Recall-A calibration records.

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4. A review of the calibration program files/records for the CAAS system components showed that some of the files did not contain the latest change-out sheets, e.g., four of the eight monitor records sampled for Building 9204-2E were missing. Eventually, the missing records were found and returned to the files. The final review verified that these CAAS monitors were satisfactorily calibrated, within the required specifications and periodicity, and consistent with the Recall-A data.

5. The maintenance shift supervisor (MSS) tracked and distributed the PM/change-out status of the CAAS monitors on a separate (non-Recall-A) report. A comparison of the MSS status report, dated December 4, 1995, with a comparable Recall-A status report showed significant differences between the two. All eight sample monitor (M) numbers were different. A walk down confirmed the Recall-A program M-numbers were correct. Further investigation showed that although several monitors were changed out in November 1995, the December 12, 1995, report (33 days after the earliest change-out) did not reflect the new status. Further investigation determined that the January 15, 1996, MSS status report (which covered a time interval with no change-outs) was correct and consistent with the components in the field. It was concluded that the MSS tracking system was functional but may have problems with timely updating.

6. The Fire Protection Department has committed to the development of at least seven fire protection system preventive maintenance procedures by April 30, 1996. Presently, none of these procedures have been issued for use, nor has the associated preventive maintenance been performed on the associated systems. Most of the procedures are either still under development, with only a few that may be close to entering the review and approval cycle. During an interview, a senior procedure writer stated that the April 1996 date would not be met, and an extension would have to be requested. Because of limited resources and higher priorities, he could not speculate on a new date for completion at this time.

Conclusions:

The master CAAS component calibration files/records are sometimes incomplete and unavailable for reference and audits. Additional controls are needed to ensure that these master calibration files/records are secured and periodically checked to ensure they are complete at all times. The various CAAS monitor PM/change-out status reports that are published for use do not always reflect the current status, nor are they always consistent with each other. Special attention is needed to ensure the status reports are updated within a reasonable time after change-out. Also,

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-2 (CO-10)	Date: January 26, 1996

consolidation into one report that could be used by all groups should be considered to eliminate inconsistencies. Fire protection preventive maintenance procedures do not exist, preventive maintenance has not been performed on the related systems, and current commitment dates for completion will not be met. Overall, however, activities in this area are adequate to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: H. A. Oliver III G. P. Zagursky	Approved by: _____ RA Team Manager Date: 2/7/96

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-3 (CO-11)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-11 Safety system and other instruments that monitor Technical Safety Requirements (OSRs at Y-12) are monitored for calibration. (CR-5)

Criteria

Calibration has been properly performed at the required frequency for all safety systems and safety-related process system components.

Approach

Record Review:

1. Verify all calibration/inspection requirements for safety system and safety-related process system components are incorporated into the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs.

2. Review calibration/inspection records to verify all calibrations/inspections have been performed at the required frequency.

3. Review records to verify standards used for calibration/inspections are acceptable.

Interviews:

None

Shift Performance:

1. Observe rounds in Building 9204-2/9204-2E to verify calibration/inspection status of safety systems and safety-related system components are being monitored.

2. Observe at least two calibration/inspections to verify they are being properly performed.

Personnel contacted/position:

- D. M. Nabors, shift manager
- H. S. Hackler, fire chief

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- L. J. Fenstermaker, fire captain
- L. E. Randolph, fire protection reports and data clerk

Records & other documents reviewed:

- Evidence file C202
- Y/TS-1314, "Operational Safety Requirements for Building 9204-2/2E Material Access Area," Revision 1

Evolutions/operations witnessed:

- Verified the calibration/inspection requirements for the fire protection and CAAS systems in Building 9204-2E were incorporated into the appropriate calibration records.
- Reviewed the inspection/calibration records to verify they had been performed at the required frequencies to acceptable standards.
- Observed rounds in Building 9204-2E to ensure the calibration/inspection status of the fire protection and CAAS system components were being monitored.

Discussion:

1. The shift manager performed a walk-through (administrative rounds) at the beginning of each shift to familiarize himself with the status of the systems and components prior to the plan-of-the-day meeting. In the observed walk-through, he checked the calibration stickers on the CAAS monitoring stations. Admittedly, this check was not made each day. However, prior to the commencement of special tests or the return of equipment to operation, operations personnel claim (and were observed by others) to check the calibration status of system components. Furthermore, this requirement to check the calibration status had been included in the appropriate procedures to ensure compliance with this requirement.

2. A review of the calibration records showed the Building 9204-2E fire protection system LCO pressure gauges were replaced with new, calibrated gauges in August 1995. The new gauges were in compliance with the Underwriter's Laboratory (UL) fire protection code requirements. The components were put on a five-year calibration cycle. The data sheets for these replacements would also be used for future calibrations and documented the following: the original (last) calibration date, the next calibration date, the as-found and as-left system pressures, and the OSR minimum system pressure limits for comparison with the as-found and as-left pressures. Values below the OSR minimum limits result in entering an LCO.

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-3 (CO-11)	Date: January 26, 1996

3. Monthly, quarterly, and annual inspections of the Building 9204-2E fire protection system were current, satisfactorily tracked, and prominently displayed on a "white board" outside the fire chief's office for easy use and reference. This board clearly depicted these inspections as "LCO" related and satisfactorily reflected the OSR inspection requirements and intervals.

4. A review of the calibration program files/records for the CAAS system components showed that although some problems with the completeness of the files and the accuracy of the various tracking systems were found, ultimately the calibration records and required frequencies were satisfactory (see CO-10).

Conclusion:

Except for some problems with the master CAAS component calibration files/records (see C-10), the documents and activities reviewed during this assessment satisfactorily met the criteria for this objective. Therefore, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: H. A. Oliver III G. P. Zagursky	Approved by: _____ RA Team Manager Date: 2/7/96

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-4 (CO-12)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-12 All safety and safety-related utility systems are currently operational and in a satisfactory condition.

Criteria

1. Calibration has been performed at the required frequency for all safety systems. (See CO-11.)

2. Procedures are in place to provide surveillance of safety-related equipment.

3. Assess the status of the safety systems in the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs. (See CO-10.)

Approach

Record Review:

1. Review calibration/inspection records to verify all calibrations/inspections have been performed at the required frequency. (See CO-11.)

2. Compare site/division surveillance procedures against the OSR surveillance requirements to verify they are compatible.

3. Review surveillance records to verify surveillances are current. (See CO-4.)

Interviews:

None

Shift Performance:

Walk down, to include actual or simulated operation, all safety and safety-related utility systems to verify they are currently operational and in a satisfactory condition.

Personnel contacted/position:

None

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-4 (CO-12)	Date: January 26, 1996

Records & other documents reviewed:

- Evidence files C203 and C205
- Procedure Y50-53-SO-031, "Surveillance of CAAS for Building 9204-2/2E"

Evolutions/operations witnessed:

- Reviewed the inspection/calibration records for the fire protection and CAAS systems in Building 9204-2E to verify they had been performed at the required frequencies.
- Verified procedures were in place to provide surveillance of safety-significant equipment.
- Verified the surveillances for the fire protection and CAAS system components were current.
- Performed a walk-down to verify the safety systems were operational and in satisfactory condition.

Discussion:

1. The monthly, quarterly, and annual fire protection inspections of the Building 9204-2E were satisfactorily tracked and performed at the required frequencies. The calibration frequencies for the system components had been satisfactorily met since the program was implemented in August 1995.

2. A review of the calibration program files/records for the CAAS system components showed that although some problems with the completeness of the files and the accuracy of the various tracking systems were found, ultimately the calibration records and required frequencies were satisfactory (see C0-10).

3. A comparison of the surveillance procedures with the requirements in the OSR verified that the procedures were satisfactory with the exception of procedure Y50-53-SO-031. This procedure lacked some of the OSR requirements, such as allowed time intervals for LCO situations (see CO-7).

4. The processes used for tracking safety-significant system surveillance was found to be satisfactory, e.g., no late or omitted surveillance. The historical surveillance records (since March 1995 when D&A assumed responsibility for their control) were found to be complete, accurate, and retrievable.

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5. A walk down of the safety-significant systems in Building 9204-2E indicated that both safety-significant systems were in service and in satisfactory condition.

Conclusions:

Procedure Y50-53-SO-031, "Surveillance of CAAS for Building 9203-2E," does not contain all the OSR requirements. Notably missing were the allowed time intervals for the performance of the test (e.g., within one hour after one radiation detector station is declared inoperable and within 24 hours after entering an LCO). However, activities in this area are adequate to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: H. A. Oliver III G. P. Zagursky	Approved by: _____ RA Team Manager Date: 2/7/96

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RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-13 Training and qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)

Criteria

1. Training and qualification requirements have been implemented according to the schedule outlined in the Y-12 Plant Training Implementation Matrix (TIM).

2. Compliance with the TIM schedule is current.

3. Training and qualification of personnel is at a level sufficient to support resumption, or appropriate compensatory measures are in place.

Approach

Records Review:

1. Review training and qualification program procedures to verify requirements have been implemented according to the schedule outlined in the TIM.

2. Review training and qualification records to verify compliance with the TIM schedule.

3. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption. If deficiencies exist, review records that show line managers have approved and put in place appropriate compensatory measures.

4. Review records to determine the following:

   a. Content of training programs is determined by systematic analysis.

   b. Qualification requirements (especially those leading to certification) and medical requirements are clearly specified.

   c. Division training staff qualification requirements have been met.

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d. Verification of qualification requirements leading to certification has been conducted.

e. A graded approach is used to establish program content.

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption and they understand any compensatory measures in place.

Shift Performance:

Observe operators, support personnel, and line managers performing/simulating at least three operations to verify their level of training and qualification is sufficient to support resumption and they understand any compensatory measures in place.

Personnel contacted/position:

- R. J. Shelton, DSO training manager
- S. L. Chapman, QO training manager
- R. W. Buchanan, dimensional inspector
- V. K. Chandler, material controller
- K. F. Kesterson, QO, materials testing lab supervisor
- E. E. Howard, assemblyperson
- C. C. Jones, material clerk
- J. V. Ledbetter, disassembly supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, D&A shift manager
- J. E. Radle, D&A department manager
- B. A. Scott, machine cleaner
- R. L. Smith, machine cleaner
- W. T. Thomas, process engineer
- E. W. Wade, DSO maintenance coordinator
- M. D. Waldrop, DSO process engineer
- E. J. Walker, mechanical/physical properties technician
- M. K. Waters, radiographer
- B. L. Witt, QO, physical testing, alternate supervisor
- M. W. Woody, assemblyperson

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Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 26, 1996

Records & other documents reviewed:

- Evidence files C304DS, C304Q, and CL304-1
- Four Quality Organization (QO) personnel training records
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 5/13/94
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 1/25/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 8/15/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 8/22/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 11/8/95
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 5/17/94
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 1/25/95
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 8/22/95
- Procedure Y90-030, "Training Records," dated 6/21/94
- Procedure Y90-030, "Training Records," dated 1/25/95
- Procedure Y90-030, "Training Records," dated 8/22/95
- Procedure Y90-040, "Conduct of Training Analysis," dated 11/29/93
- Procedure Y90-040, "Conduct of Training Analysis," dated 1/25/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 12/28/93
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 1/25/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 7/24/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 8/22/95
- Procedure Y90-080, "Conduct of Training Implementation," dated 6/21/94
- Procedure Y90-090, "Training Remediation," dated 8/22/95
- Procedure TQ-106, IAD "Control/Administration of Examinations" (12/95)
- Procedure TQ-108, "Training Records Management" (4/95)
- Procedure TQ-110, IAD "Exceptions, Extensions, and Alternative" (12/95)
- Procedure TQ-120, IAD "Selection/Qualification/Certification/Training Personnel" (12/95)

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

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Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 26, 1996

Discussion:

1. Evidence File Review

   a. The following are examples of problems identified in the evidence files reviewed:

      (1) J. P. Davis, weld inspector, was not identified in the C304Q file, but he did function in support of D&A. This file did not contain evidence of qualification for all of the personnel supporting D&A activities. This file did not contain evidence of certification for those personnel in certified positions (evidence of certification is, however, kept in the personnel training files located in Building 9709).

      (2) Evidence file C401DS listed 24 TMS module numbers that specific DSO personnel were required to complete. Two of the required modules (#14117, Fire System Inoperabilities," and #13775, "Conduct of Drills Orientation") for a material controller did not appear on the associated qualification card in evidence file C304DS. One of the required modules (#13912, "Operation and Shield Survey") for a welder did not appear on the associated qualification card in evidence file C304DS. There were 14 qualification cards in C304DS.

      (3) Evidence file CL304.1, internal review of disassembly and assembly training records, did not contain adequate evidence of a valid internal review of D&A training records. Compliance requirements for the review did not reflect the actual requirements for the records reviewed. Specific examples included the review of training records for D. S. Johnson and E. W. Westen. Both individuals were identified as metallurgists. However, the internal review determined that a comprehensive examination and operational evaluation was required for one and not the other.

   b. Two radiographers' training records contained a letter from B. L. Witt indicating that these personnel were no longer designated to be certified. The QO training manager said that both persons were designated to be certified. The training records contained evidence that one radiographer was qualified and one radiographer was certified.

   c. The comprehensive examination for a QO metallurgist was not properly graded. A recount of the items missed resulted in a failing score for that section of the examination. A remedial examination was not given for the failed section. Since satisfactory completion of a comprehensive examination is a prerequisite for certification, the metallurgist should be considered decertified. After a review of this issue, and a review

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Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 26, 1996

of the comprehensive examination, the QO training manager indicated that the metallurgist would be decertified. However, over a week after discovery of the problem, the metallurgist had not actually been decertified.

d. During the course of an interview with the QO training manager, he said that proficiency requirements for certification had not been identified for QO personnel, nor had any command media been developed to identify proficiency requirements.

2. In evidence file C301DS, an assembly operations assistant named on the D&A resumption list was not in evidence file C501DS on a list titled "List of DSO Operations Personnel Identified in C301DS as part of the D&A Resumption Effort."

3. In evidence file C501DS, a name on a list, titled "List of DSO Operations Personnel Identified in C301DS as part of the D&A Resumption Effort," was not present on the list of personnel for D&A resumption in C301DS.

Conclusion:

Problems were found in the training and qualifications programs in both D&A and QO. Training program plans that describe the goals and objectives of the training and qualification programs are in place, but are still in draft form. On-the-job-training (OJT) and hands-on evaluation of skills is incorporated into the training programs. Initial training programs are in place. The qualification/certification process is clearly defined and found to be adequate in D&A. The QO qualification/certification process does not have procedures that define proficiency requirements. Once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: N. T. Ford R. K. McConathy	Approved by: _____ RA Team Manager Date: 2/7/96

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RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-14 Technical qualifications of contractor personnel responsible for facility operations are adequate. (CR-19)

Criteria

1. Compliance with the TIM schedule is current. (See CO-13.)

2. Training and qualification of personnel is at a level sufficient to support resumption. (See CO-13.)

3. Personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operations.

4. Applicable non-reactor nuclear facility managers, supervisors, operators, technicians, maintenance support, and technical support personnel are evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

Approach

Record Review:

1. Review training and qualification program procedures to verify compliance with the TIM schedule. (See CO-13.)

2. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption.

3. Review records that demonstrate line management has put in place controls to ensure personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operation.

4. Review records that demonstrate appropriate personnel have been evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

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Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption. Also verify they know that if personnel do not meet the current qualification requirements for a particular operation, they shall have a qualified individual with them while performing that particular operation. (See CO-13.)

Shift Performance:

Observe operations, support personnel, and line managers performing operations to verify their training and qualification are at a level sufficient to support resumption. (See CO-13.)

Personnel contacted/position:

- D. L. Gordon, senior training specialist
- M. K. Snyder, senior training specialist
- R. S. Ackroyd, senior training specialist
- M. R. Rettig, senior training specialist
- R. J. Shelton, DSO training manager
- R. W. Buchanan, dimensional inspector
- V. K. Chandler, material controller
- K. F. Kesterson, materials testing lab supervisor
- E. E. Howard, assemblyperson
- C. C. Jones, material clerk
- J. V. Ledbetter, disassembly supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, D&A shift manager
- J. E. Radle, D&A department manager
- B. A. Scott, machine cleaner
- R. L. Smith, machine cleaner
- W. T. Thomas, DSO, technical support, process engineer
- E. W. Wade, maintenance coordinator
- M. D. Waldrop, process engineer
- E. J. Walker, mechanical/physical properties technician
- M. K. Waters, radiographer
- B. L. Witt, QO, physical testing, alternate supervisor
- M. W. Woody, assemblyperson

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Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996

Records & other documents reviewed:

- Evidence Files C303DS and C303FM
- Table Top Analysis for D&A supervisor
- DSO Task to Train Matrix
- QO Table Top Analysis
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 5/13/94
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 1/25/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 8/15/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 8/22/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 11/8/95
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 5/17/94
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 1/25/95
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 8/22/95
- Procedure Y90-030, "Training Records," dated 6/21/94
- Procedure Y90-030, "Training Records," dated 1/25/95
- Procedure Y90-030, "Training Records," dated 8/22/95
- Procedure Y90-040, "Conduct of Training Analysis," dated 11/29/93
- Procedure Y90-040, "Conduct of Training Analysis," dated 1/25/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 12/28/93
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 1/25/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 7/24/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 8/22/95
- Procedure Y90-080, "Conduct of Training Implementation," dated 6/21/94
- Procedure Y90-090, "Training Remediation," dated 8/22/95
- Procedure TQ-106, IAD "Control/Administration of Examinations" (12/95)
- Procedure TQ-108, "Training Records Management" (4/95)
- Procedure TQ-110, IAD "Exceptions, Extensions, and Alternative" (12/95)
- Procedure TQ-120, IAD "Selection/Qualification/Certification/Training Personnel" (12/95)

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

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Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996

Discussion:

1. Evidence files that were reviewed were found to be adequate.

2. The qualification requirements for the assemblyperson dismantlement position did not include training that was identified by the operating organization as being required for qualification/certification. Personnel were certified without having met all of their identified qualification requirements. Specific examples included training on operation of leak detectors and SAM-2 meters, preparation and application of adhesives, packing of components for shipping, operation of the CNC South Bend lathe, and preparation and utilization of vacuum cans.

3. With few exceptions, the training program for D&A and QO focused on procedure training and did not promote process understanding or integrated system knowledge. The training programs consisted almost entirely of health and safety compliance-based training and procedure-based training involving performance documentation checklists (PDC). Little attention had been given to fundamentals training and training that instructed operators on how and why systems, equipment, and processes function. Without fundamental training and integrated system training, the trainees may not be fully knowledgeable of procedural requirements, purpose, and any unexpected or abnormal situations.

4. D&A and QO personnel were interviewed. Areas of inquiry included knowledge of compensatory measures, controls for non-qualified staff, purpose and requirements for qualification/certification conduct of operations, and procedural requirements. The majority of those interviewed demonstrated knowledge deficiencies in the area of qualification/certification. Virtually all of those interviewed knew that if personnel did not meet qualification requirements, they must have a qualified individual with them.

5. Evidence packages were reviewed for evidence of education and experience of staff. The evidence files referenced training records. Training records contained questionnaires and letters that indicated the requirements were met.

6. Controls that ensured only qualified/certified personnel performed activities requiring qualification/certification had not been sufficiently established in the Facilities Management Organization (FMO). The lack of documentation of key training requirements (e.g. fire protection system) precluded implementation of an effective control system. In addition, qualification requirements based upon analysis had not been fully implemented in the FMO training program. Current qualification requirements were not updated with new analysis data.

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Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996

Conclusion:

Problems were found with the training programs for D&A and QO. Neither organization's training program contain fundamental and system training. D&A personnel qualification requirements do not always include training identified by the operating organization as being required for qualification/certification. FMO has not sufficiently established controls that ensure only qualified/certified personnel perform activities requiring qualification/certification. However, once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: N. T. Ford R. K. McConathy	Approved by: _____ RA Team Manager Date: 2/2/96

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RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-16 Training has been performed to the latest revision of procedures. (CR-18)

Criteria

All applicable personnel have been trained to the latest revision of the procedure.

Approach

Record Review:

1. Verify line management has designated in writing personnel who are necessary to perform specified tasks.

2. Review personnel training and qualification records to verify the personnel who are designated to perform specific tasks have been trained to the latest revision of the procedures applicable to each task.

3. Verify that continuing training programs are established and implemented.

Interviews:

None

Shift Performance:

Observe at least three simulations/evolutions to verify that personnel conducting the simulations/evolutions are designated in writing to perform them and have been trained to the latest revision of the applicable procedure.

Personnel contacted/position:

- R. J. Shelton, DSO training manager
- D. Martin, training records staff
- S. Chapman, QO training manager
- K. C. Marks, instructor, DSO training department

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Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 26, 1996

Records & other documents reviewed:

- Evidence Files C302ME, C401DS, C402DS, C401ME, and C403

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. Two D&A positions listed in evidence file C401DS were required to be trained on specific procedures and associated TMS modules. This required training was not identified on qualification cards for two workers in evidence file C304DS. Specifically, the material controller position required training for TMS modules 14117 and 13775 for procedure Y50-01-82-045, "Fire System Operability - 9704-2 and 9704-2E Fire Patrols," but these courses were not on the qualification card. The welder position required training for TMS module 13912 for procedure Y50-01-B2-043, "Electron Beam Welder Operation," but this course was not on the qualification card. There was no record in TMS that either individual had the required training.

2. No problems were noted in files C402DS or C403.

3. Evidence file C302ME listed "Specified Tasks vs. Applicable Procedures." Tasks related to engineering support listed procedure Y50-55-PT-415 (module 15463) as being required. A list of QA/QC personnel needed to perform D&A operations listed D. W. Koerner and D. A. Waldrop as engineering support. In C401ME, under engineering support, D. A. Waldrop was not listed as required to be trained in module 15463, and it was not indicated that he had completed the training. D. W. Koerner was required to take module 15463, and it showed it was completed. A form, dated November 9, 1995, listed D. W. Koerner as being trained in module 15463 on October 27, 1995, but D. A. Waldrop was not listed. Based on these records, Waldrop had not been trained in module 15463. In Waldrop's training file, his qualification card did not list module 15463, and there was no record of his taking module 15463. A member of the training records staff said the training record files did not indicate that either Waldrop or Koerner were qualified/certified for their positions.

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Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 26, 1996

4. Continuing training dates were not accurately and consistently identified. The following are examples of inconsistencies for scheduling continuing training dates:

   a. In evidence file C304DA, the qualification card for an assemblyperson - disassembly, listed the recertification interval for module 9044 (License - overhead crane/pendant) as 24 months. The group requirement/qualification status (GRQ) form for this individual gave a requalification date of November 20, 1998, or more than 24 months in the future.

   b. In evidence file C304DS, the qualification card for an assemblyperson - disassembly, listed the recertification interval for module 13003 (annual security refresher) as annual. Module 13003 was also marked as a "fixed continuous task" for training. The GRQ form, dated January 11, 1996, for this individual did not list a requalification date for module 13003.

   c. In evidence file C304DS, the qualification card for an assemblyperson - disassembly, listed the recertification interval for module 6501 (SNM Locking Systems) as "none." The group training history (GTH) form, dated January 11, 1996, showed the assemblyperson completed module 6501 on May 6, 1994, and had a requalification date of May 5, 1996. A material controller's GRQ form did not list a requalification date for module 6501, and his qualification card gave an annual recertification.

   d. In evidence file C304DS, the qualification card for an assemblyperson - disassembly listed module 11867 (Emergency Preparedness Plan) without a requalification date. The GTH form, dated January 11, 1996, showed this individual completed module 11867 on November 10, 1995, and had a requalification date of November 9, 1996. The qualification card for an engineer gave module 11867 an annual recertification requirement, but the engineer's GRQ form did not list a requalification date.

   e. In evidence file C304DS, the qualification cards for a disassembly supervisor and machine cleaner listed the requalification interval for module 11536 (Medical Exam - PSAP) as annual. The GRQ form for these individuals gave requalification dates of February 13, 1997, and March 11, 1997, for module 11536, or more than 12 months in the future.

5. In evidence file C304DS, the qualification card for a machine cleaner listed module #1943 (Haz. Comm. Trng. Level 1) as required. The GRQ form for this individual did not list module #1943.

6. The Quality Organization had not established and implemented a continuing training program.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 26, 1996

7. A D&A training class (Conduct of Operations, Chapter XVI, Procedure Use, module 14544) was observed. Four students were present and all passed the written examination. The instruction was well done. A student taking the examination pointed out that a multiple choice question on the test (#9, exam A) used two choices (B and C) that were equally correct, and "B" was the "correct" answer. The instructor did not count the question on that day's examination, and said he would correct or replace the test question.

Conclusion:

D&A has established an adequate continuing training program, but continuing training dates are not consistently and accurately identified. However, QO has not established and implemented a continuing training program. Resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: N. T. Ford R. K. McConathy	Approved by: _____ RA Team Manager Date: 2/7/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-17 Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance. (CR-3)

Criteria

Evaluate required facility-specific knowledge of operations personnel by observations of the performance of simulations, drills, and through oral interviews of the operating personnel.

Approach

Record Review:

1. Review documentation to ensure examination requirements for qualification/certification have been met.

2. Review records for objective evidence of the examination content, administration, grading, and success level of the candidate.

3. Review documentation to ensure examination content is based on requirement elements as appropriate to the position.

Interviews:

1. Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to determine if their level of knowledge is adequate.

2. Make a short comprehensive examination, which will be administered to a selected group of division personnel by management. Division manager will provide to the LMES RA team the completed examination. Use this information to determine the adequacy of facility-specific facility knowledge.

Shift Performance:

1. Observe at least three simulations/evolutions performed by operating personnel to verify facility-specific level of knowledge is adequate.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996

2. Observe at least two drills performed by operating personnel to verify facility-specific level of knowledge is adequate.

Personnel contacted/position:

- C. L. Lane, trainer in technical support
- R. J. Shelton, DSO training manager
- D. J. Martin, training records
- R. W. Buchanan, dimensional inspector
- V. K. Chandler, material controller
- K. F. Kesterson, QO, materials testing lab supervisor
- E. E. Howard, assemblyperson
- C. C. Jones, material clerk
- J. V. Ledbetter, disassembly supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, D&A shift manager
- J. E. Radle, D&A department manager
- B. A. Scott, machine cleaner
- R. L. Smith, machine cleaner
- W. T. Thomas, process engineer
- E. W. Wade, maintenance coordinator
- M. D. Waldrop, DSO process engineer
- E. J. Walker, mechanical/physical properties technician
- M. K. Waters, QO, physical testing radiographer
- B. L. Witt, QO, physical testing, alternate supervisor
- M. W. Woody, assemblyperson

Records & other documents reviewed:

- Evidence Files C301DS, C501DS, and C501Q
- Training Module 14135, "Comprehensive Tests for Supervision, Welder, and Assembly Person"
- Training Modules 14134, 09187, 06501, 15003, 7807, 14592, and 14675
- Training records files for 12 Quality Organization (QO), two NCSD, two PSS, six DSO, and three FMO personnel

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. No problems were noted in file C501Q.

2. FMO training files for a supervisor, electrician, and pipefitter were reviewed, and none contained qualification/certification documentation.

3. Interviews were conducted with D&A and QO personnel. Areas of inquiry included knowledge of compensatory measures, controls for non-qualified staff, purpose and requirements for qualification/certification conduct of operations, and procedural requirements. Operators' knowledge of compensatory measures, particularly mentor duties and responsibilities, was weak but adequate. The majority of those interviewed demonstrated knowledge deficiencies in the area of qualification/certification. Overall level of knowledge was adequate.

5. An August 13, 1995, letter in training records for two radiographers stated that all QO personnel for QE1 restart should be certified, except for the two radiographers. The letter said the two radiographers should only be "Qualified," since they were not assigned jobs within 9204-2E. Both of their names were on the list of personnel for D&A restart. A review of the radiographer's training records showed one was "qualified" and one was "certified." Therefore, the "qualified" radiographer should have been "certified," but his training records did not support his being certified.

6. Training records for two plant shift superintendents did not contain any certification/qualification documentation forms. There was documentation for all required courses listed on their GRQ forms.

7. Training records for two NCS specialists contained qualification documentation. Both files contained a memo from training records to D. F. Keyes stating there were deficiencies, expirations, or missing training modules based on November 1995 GRQ forms. There was no evidence that the missing training had been taken. The training file of one NCS specialist did not have documents to prove all required training was completed.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996

8. Training records for two QO engineers did not contain documents for certification/qualification. Both had a document stating they were a "Qualification Certification Official." The medical documentation in one was missing and present in the other. Evidence records in both training files were incomplete.

9. The following problems with examination administration and grading were noted in QO:

   a. An inspector's examination for module 9934, taken October 8, 1992, was not scored or the questions marked right or wrong.

   b. A supervisor, dimensional inspection, took a module 7958 examination. The instructor eliminated one of the 50 questions as being invalid. The supervisor missed the invalid question plus 10 other questions. The instructor scored the test based on 50 questions (40/50) and gave the individual 80 percent (a passing grade), instead of 39/49 (79.6 percent), which is potentially a failing grade.

   c. An examination in an engineer's training report titled "PT-PLT-100 Fissile Material Loading Limits" was not scored or the questions marked right or wrong.

   d. On one examination identical questions were used. One test given for remediation was identical to the failed examination.

   e. One comprehensive examination had a question that was not scored as correct or incorrect. The trainee had marked two answers to the questions, one of which was incorrect.

   f. A radiographer (certified position) comprehensive examination had four examinations (PT 303, PT 374, PT 402, and PT 409) stapled together and graded as one examination. The examination score on the top page was written as 4 of 23 missed, 83%, and "Passed." Examinations PT 402 (Y50-55-PT-402, "Operation of 300kV Norelco") and PT 409 (Y50-55-PT-409, ""Operation of 100kV Norelco") each had three questions. The last question on each examination asked the worker to match a diagram of the device with proper labels (there were 13 matches in each question to be made). The last question on PT 402 was crossed out and marked "NA" and had a written note "Does not use machine." The last question on PT 409 had been answered, and the worker missed eight of 13 matches, but this page was crossed out, initialed, and marked "NA," The four examinations were graded, minus the 26 points of the two crossed out questions, e.g., there were a total of 49 points on the four examinations, but the score was based on 23 points.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996

11. The following problems with examination administration and grading were noted in DSO:

    a. An assemblyperson's tests for modules 14316 and 14317 had no score written on the test paper. Another assemblyperson's tests for module 14114 had no score written on the test paper.

    b. A welder missed three of 15 questions (87 percent) on a module 14125 examination, but the score written on the test was 80 percent. This welder was qualified, not certified, in TMS 5058.

    c. An assemblyperson's comprehensive examination, dated November 16, 1995, was marked with eight questions missed, but nine wrong answers were counted, making the score 88 percent, instead of the marked 89.6 percent.

    d. An assemblyperson's comprehensive examination for module 14135, dated November 17, 1995, was marked with six questions missed. A recount showed eight questions were missed, thus the marked score of 92 percent should have been 89 percent.

    e. One of three training module tests reviewed needed editing for misspelled words and sentence comprehension.

12. A "Level of Knowledge Examination" consisting of 20 questions selected from existing DSO module examinations was given to D&A personnel by the DSO training department. The questions were selected from courses required for all D&A personnel, and they covered a range of topics, i.e., procedures, conduct of operations (almost half of the questions), radiation safety, nuclear criticality safety, and lockout/tagout. The test was given to 19 workers selected by the training department. The average of all examination scores was 82.6 percent, and scores ranged from 70 to 90 percent. Five people scored less than 80 percent.

    a. The following three questions were missed by over 50 percent of those taking the examination. (The correct answer is in BOLD.)

        3. What is the purpose for a Job-Specific Radiological Work Permit? *(53 percent missed)*

            a) To control routine or repetitive minor work activities such as inspections or tours.
            b) To control non-routine operations or work in areas with changing radiological conditions.
            c) To control non-routine operations for up to one calendar year.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996

d) To control routine work activities for the duration of a particular job.

11. During maintenance activities or outages, status controls on equipment and systems that do not affect facility activities *(63 percent missed)*

a) are always relaxed.
b) are ignored.
c) may be relaxed.
d) can never be relaxed.

15. What can be used to communicate short term information to operations personnel? *(58 percent missed)*

a) Standing orders
b) Daily orders
c) Both A and B
d) None of the above

Most people selected answer "d" for #3, answer "d" for #11, and answer "c" for #15.

b. The following three questions were missed by 25 to 50 percent of those taking the examination. (The correct answer is in BOLD.)

7. Who validates and directs getting a Lockout/Tagout system isolated and prepared for others to work on? *(26 percent missed)*

a) Issuing authority
b) Service supervisor
c) Affected operator
d) Service person

Answers "b", "c," and "d" were equally selected by those who missed Question #7.

12. Drills are used to *(32 percent missed)*

a) ensure workers arrive to work on time.
b) develop and maintain a high state of readiness and teamwork.
c) evaluate responses to normal operational situations.
d) classify qualification requirements.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996

All those who missed #12 gave answer "c".

18. Any explanatory notes or information entered on a procedure *(26 percent missed)*

    a) **must be initialed and dated.**
    b) should be in a pencil to allow erasing.
    c) will require replacing the procedure with a new copy.
    d) can only be made by management.

    Answers "c" and "d" were given by those who missed #18.

The examination results were grouped by job titles to determine if there were specific questions that were missed. The four supervisor/manager personnel who took the examination averaged 85 percent (range was 80 to 90 percent). Three of them missed questions #12 and #15 (see above).

Assemblypersons (six each) and an assembly operations assistant averaged 80.7 percent (range was 70 to 90 percent), and three scored below 80 percent. Three of these workers missed questions #3, #7, and #12 (see above).

Material clerks and controllers (five total) averaged 83 percent (range was 75 to 90 percent) and one scored below 80 percent. All five of these workers missed question #15 (see above). Four workers missed question #11 (see above). Three workers missed question #3 (see above).

Two process engineers and a machine cleaner also took the examination, but no trends were noticed. The engineers scored 85 and 90 percent, and the machine cleaner scored 75 percent.

c. Two questions on the examination required a short essay answer (see below).

19. Two workers have been assigned to work in an area that requires a Radiological Work Permit (RWP) for entry. One worker tells the other that he/she has read and signed the RWP for both of them. Is this an acceptable practice? **Yes** or **NO**

    WHY? <u>Each person must sign to indicate they understand the conditions of the area and the requirements for entry.</u>

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996

20. To report a release or a spill, what actions should you take? *(22 percent missed)*

Call 911 or 4-7172, or pull the Gamewell Alarm

No one missed the "NO" answer to #19, but only 10 workers answered the "WHY?" essay in a way that indicated they understood the concept for the "NO" answer. Three workers' answers were similar to one that stated: "You are trained to sign your own name." Four answers showed an understanding between this poor response and the correct answer given above.

About six people interpreted question #20 to be how to control a spill, not how to "report" a spill. The "SWIM" concept of spill control was included in six answers. About 12 people gave a good response. Due to the confusion around the question's interpretation, no trends will be analyzed.

Four of the five most missed questions (72.5 percent of those taking the examination missed these four questions) were related to conduct of operations topics. Of all of the questions missed by those who took the examination, 69 percent were related to conduct of operations questions.

Conclusion:

Problems that related to administration, grading, and records of examinations that lead to qualification/certification were found in both D&A and QO. The problems in QO are far more significant than those in D&A. In one example, the comprehensive examination for a metallurgist was not properly graded, and the corrected grade was failing. Satisfactory completion of a comprehensive examination is a prerequisite for certification. The metallurgist was removed from work activities, but certification documents remained in place. Since QO support is not required, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: N. T. Ford R. K. McConathy	Approved by: _____ RA Team Manager Date: 2/7/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-5 (CO-18)	Date: January 26, 1996

Method of Appraisal (short narrative description):

Objective

CO-18 There are sufficient numbers of qualified personnel to support safe operations.

Criteria

The numbers and qualifications of operating personnel necessary to perform the specified tasks defined in the operating procedures are adequate for normal and postulated emergency conditions.

Approach

Record Review:

Verify the numbers and qualifications of operating personnel required in the operating procedures are adequate for normal and postulated emergency conditions.

Interviews:

None

Shift Performance:

1. Observe at least three simulations/evolutions to determine if the numbers and qualifications of operating personnel are adequate.

2. Observe at least two drills to determine if the numbers and qualifications of operating personnel are adequate.

Personnel contacted/position:

- M. H. Hayes, FMO training manager

Records & other documents reviewed:

- Evidence files C301DI, C301PT, C302DI, and C302DS

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-5 (CO-18)	Date: January 26, 1996

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. No problems were noted in any of the evidence files.

2. FMO personnel did not have evidence of required training to support D&A operations. The lack of documentation of key training requirements (e.g., fire protection system) precluded implementation of an effective control system. In addition, qualification requirements based on analysis had not been fully implemented in the FMO training program. Current qualification requirements were not updated with a new analysis date. An interview with the FMO training manager confirmed that FMO fire protection requirements were currently being identified and job identification was being done, but neither task was completed.

Conclusion:

The numbers and qualifications of personnel to support resumption of operations associated with C5 disassembly and the electron beam welders will be adequate when all prestart findings for training and qualification are complete.

Inspected by: N. T. Ford R. K. McConathy	Approved by: _____ RA Team Manager Date: 2/7/96

Form 1

APPENDIX C

Deficiency Forms
(Form 2)

RA DEFICIENCY FORM

Functional Area: Procedures	CRA Number/Title: OP-1 (CO-7)	Date: January 19, 1996 ID #: RA-OP-1-1

Requirement:

All procedures, CSAs, OSRs identified as required for operation within the next 12 months have been reviewed, corrected, validated, and the most recent revisions are present in the workplace, as required.

Reference(s) (specific as to section):

Prerequisite PR-1, POA

DOE Order 5480.19, Chapter XVI

Finding X Observation: _____

Discussion:

Y/OA-6247, "Disassembly/Assembly Procedures," listed the procedures that were to be technically accurate and to incorporate applicable CSA limits and conditions and other appropriate safety limits. This list included 19 procedures that had not been revised to meet these requirements. These procedures are scheduled for completion on or before March 1, 1996.

Finding Designation: Prestart X Post-Start _____	Inspector: Bruce A. Wilson
Group Leader: M L Quinn Date: 1/19/96	Approved by: J P Flynn RA Team Manager Date: 1/19/96

Form 2

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 19, 1996 ID #: RA-MG-5-2

Requirement:

Timely resolution of reportable OSR, criticality safety, and radiological events.

Reference(s) (specific as to section):

DOE Order 5000.3B, Paragraph 8.b.(4) and 7.d.(2)

Finding______________________ Observation: ________X__________

Discussion:

Files for four disassembly and assembly occurrence reports submitted since January 1, 1995, were reviewed. The occurrences were for hoisting and rigging, criticality accident alarm, and fire protection system events. All remain open. Two occurred less than 45 days ago; the other two have been open over five months, which is well in excess of the 45 days specified in DOE Order 5000.3B, without a timely update to the 10-day report containing a detailed explanation of the delay and an estimated date for resolution. The issue of timely closure and updating of occurrence reports is the subject of Y-12 plant-wide action.

Finding Designation: Prestart_______________ Post-Start_______________	Inspector: [signature]
Group Leader: [signature]	Approved by: [signature] RA Team Manager
Date: 1/24/96	Date: 1/24/96

Form 2

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 20, 1996 ID #: RA-MG-5-1

Requirement:

Personnel understand the safety messages communicated during the awareness sessions following the September 22, 1994, event.

Reference(s) (specific as to section):

Readiness assessment Plan of Action, Paragraph V.A.1, Causal Factors of the Precipitating Event, and Paragraph V.A.3, CO-29, last sentence

Finding_____ Observation: ___X___

Discussion:

During interviews, D&A and QO personnel indicated that they understand the basic safety message from the awareness sessions conducted after the September 22, 1994, event. However, the recall of some parts of the message and of the precipitating event is limited. For example, all remember a CSA violation (usually referred to as "minor") and the improper response to a criticality safety question, but none recalled the errors in the CSA revision and review process prior to the event. Most personnel indicated they thought that not much change was needed.

Finding Designation: Prestart_____ Post-Start_____	Inspector:
Group Leader: Date: 1/23/96	Approved by: RA Team Manager Date: 1/23/96

Form 2

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 18, 1996 ID #: RA-MG-4-1

Requirement:

Noncompliances with the DOE Orders of interest to the DNFSB have approved schedules for gaining compliance.

Reference(s) (specific as to section):

Y/OA-6238, "Plan of Action for Disassembly/Assembly Activities," dated January 4, 1996, Section V.A.3 (CO-27)

Finding X Observation: _____

Discussion:

The evidence files (C1005 and C1006) did not contain documentation that the RFAs associated with D&A activities had been formally approved by DOE. The D&A resumption manager said the criteria for meeting this core objective was that LMES management approved the RFAs. This does not constitute "formal" approval as required by CO-27. DOE has to concur with the RFA and indicate approval, or the RFA is not complete. Upon reviewing a sample of RFAs associated with D&A, the following were identified:

- RFA (CSA-47B) was not approved by DOE.
- RFA (CSA-131) was not approved by DOE.
- RFA (CSA-135) was not approved by DOE.
- RFA (CSA-160) was not approved by DOE.

Further review indicated that LMES management identified RFA, CSA-160, as being required prior to restart in a memorandum dated August 23, 1995, from the vice president, defense and manufacturing to the DOE-ORO, site manager. Concurrence was received from the DOE-ORO site manager on August 29, 1995.

Finding Designation: Prestart X Post-Start _____	Inspector: Ronald A. Rapp
Group Leader: Ronald A. Rapp Date: 1/19/96	Approved by: J. F. Lyon RA Team Manager Date: 1/19/96

Form 2

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-)	Date: January 22, 1996 ID #: RA-MG-3-1

Requirement:

Safety deficiencies are identified and corrected in a timely manner.

Reference(s) (specific as to section):

"Plan of Action for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," Chapters V.A.1.a and V.A.3 (CO-27)

Finding_____ Observation: ____X____

Discussion:

The actions assigned and/or documentation in some ESAMS files does not support closure of the finding. Of seven files reviewed, two lacked adequate evidence to support closure.

In I0017881, the Request for Approval (RFA) form for implementation of DOE Order 5480.19 was not in the file. It was later determined that the RFA has not been approved by DOE.

In I0026018, the action was to provide additional training to support organizations. This does not completely address the finding that personnel need additional training on safe operation.

Finding Designation: Prestart_____ Post-Start_____	Inspector:
Group Leader: Date: 1/23/96	Approved by: RA Team Manager Date: 1/24/96

Form 2

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 23, 1996 ID #: RA-MG-2-3

Requirement:

Functions, assignments, responsibilities, reporting relationships, specific qualification, and experience of mentors assigned as compensatory measures are verified.

Reference(s) (specific as to section):

"Plan of Action for the Resumption of Disassembly/Assembly Activities," dated January 4, 1996, section V.A.3 (CO-24)

Finding X Observation: _____

Discussion:

The mentors assigned to be present for D&A activities are not respirator qualified. Disassembly activities that take place in the walk-in hood require respirators to be worn. Disassembly activity is identified as a procedure requiring a strategy III mentor as a compensatory measure. In a memo, dated January 5, 1996, from T. R. Butz and R. K. Roosa to F. P. Gustavson, it was stated "Mentors will be positioned such that the mentor can observe the activity and intervene if necessary to protect the operators and equipment." The C5 disassembly procedure was listed as applicable. Without being respirator qualified, the mentor cannot be in the area where the actual work is being performed.

Finding Designation: Prestart X Post-Start _____	Inspector: Ronald D Stapp
Group Leader: Ronald D Stapp Date: 1/23/96	Approved by: _____ RA Team Manager Date: 1/23/96

Form 2

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 18, 1996 ID #: RA-MG-2-2

Requirement:

Functions, assignments, responsibilities, and reporting relationships for operating management (up to the manager, nuclear operation) are adequately defined, understood, and effectively implemented.

Reference(s) (specific as to section):

C902 evidence package for CO-24
Y/OA-6238, "Plan of Action for Disassembly/Assembly Activities," dated 1/4/96, Section V.A.3 (CO-24)

Finding X Observation: _____

Discussion:

A review of evidence package C902, which supports CO-24, indicated that the major effort to address the above requirement focused on NCSD and the NCSD interfaces with the operating organization. This evidence file did not address the operating management chain up to the manager, nuclear operations. Interviews with first and second level managers and technicians indicated that a clear understanding of reporting relationships and authorities had not been communicated below the department manager level.

Finding Designation: Prestart X Post-Start _____	Inspector: Ronald D. Lapp
Group Leader: Ronald D. Lapp Date: 1/19/96	Approved by: J. F. Lyon RA Team Manager Date: 1/19/96

Form 2

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 18, 1996 ID #: RA-MG-2-1

Requirement:

The documentation of the conditions under which mentors can be removed is verified.

Reference(s) (specific as to section):

Y/OA-6328, "Plan of Action for Disassembly/Assembly Activities," Revision 2, dated 1/4/96, Section V.A.3 (CO-24)

C902 evidence package for CO-24

Mentor Program Description, Y/AD-627 Draft Revision

RFA, CSA-160, Conduct of Operations for D&A functions

Finding X Observation: _____

Discussion:

Neither the approved nor draft revision of the "Mentor Program Description" contains measurable or verifiable criteria for removal of mentors as compensatory measures as required for the RFA associated with conduct of operations associated with D&A activities.

Finding Designation: Prestart X JPF 1/19/96 Post-Start X	Inspector: Ronald D. Shaffer
Group Leader: Ronald D. Shaffer Date: 1/19/96	Approved by: JPF Lynn RA Team Manager Date: 1/19/96

Form 2

RA DEFICIENCY FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: OP-1 (CO-04)	Date: January 21, 1996 ID #: RA-OP-1-2

Requirement:

CSAs are technically accurate.

Reference(s) (specific as to section):

CSA B2E-04
Drawing M2E92042EA014

Finding X Observation: _____

Discussion:

The CSAs are not always accurate when describing the existing field configuration. They also allow conditions to exist that force the operator to rely on the CSA or memory to accomplish the task in a safe manner.

For example, several discrepancies or inconsistencies were noted regarding the requirements documented in B2E-04. They were as follows:

a. At least six of 25 locations in the CSA were misleading. Although consistent with the criteria established by engineering (e.g., upper left corner of the array grid as depicted in drawing M2E92042EA014), significant differences between the actual and designated locations exist in some cases.

b. The intent of CSA B2E-04 is to minimize operator error through the use of highly visible, local signs that clearly state the limiting conditions for each array. Accordingly, the operators have access to all the limits without having to refer to the CSA. However, many of the arrays described in the CSA indicated "none" regarding posted area signs. A foot note stated that "none" meant the requirements for CSA Sign #1 were automatically in effect. This practice places the burden of remembering the CSA requirements on the operator. The use of "none" is standard practice in the CSAs involving arrays. When asked, several of the facility personnel in the area said they were unsure of the requirements for arrays without signs.

Finding Designation: Prestart X Post-Start _____	Inspector: George Zoganas
Group Leader: [illegible] Date: 1/23/96	Approved by: _____ RA Team Manager Date: 1/23/96

Form 2

RA DEFICIENCY FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 22, 1996 ID #: RA-OP-1-3

Requirement:

There are adequate and correct procedures for operating systems and utility systems.

Reference(s) (specific as to section):

CSA PT-RAD-200, "9204-2E Radiography, Handling, and Storage"
CSA DI-B2E-100, "Fissile Floor Arrays and Workstations"

Finding X Observation: _____

Discussion:

Quality Organization (QO) Criticality Safety Approvals (CSA) contained vague, non-specific wording, which permitted operator latitude in interpreting requirements. The following are examples:

a. In the requirements section of CSA PT-RAD-200, the terminology "etc." was used to describe types of containers (section 2.b.) approved for floor storage. In the clarifications section, "etc." was used to describe the equipment used to transfer components into or out of the X-ray area. The radiography supervisor was confused about the meaning of the use of "etc." He said it probably referred to CSA PT-PLT-100, "Fissile Material Loading Limits." The CSA should be specific and not contain nebulous terminology.

b. CSA DI-B2E-100, "Fissile Work Stations and Fissile Storage Arrays," contained vague wording in two areas:

(1) Under proposed activity, "Various gages, micrometers, comparators, scales, etc., may be used at the fissile work stations during the dimensional inspection operations."

(2) Under clarification, "Tools, gages, etc., may be left unattended on the fissile work stations."

RA DEFICIENCY FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 22, 1996 ID #: RA-OP-1-3

c. CSA PT-RAD-200 referred to four QE procedures and future new activities. The supervisor for the quality materials and equipment evaluations department was asked what "future new activities" meant. He said this was in the CSA in case something special would need to be radiographed in the future. Then the organization would be able to do it in accordance with this CSA.

Finding Designation: Prestart X Post-Start	Inspector: Ronald D. Shaffer
Group Leader: [illegible] Date: 1/23/96	Approved by: [illegible] RA Team Manager Date: 1/23/96

Form 2

RA DEFICIENCY FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 24, 1996 ID #: RA-OP-1-4

Requirement:

There are adequate and correct procedures for operating systems.

Reference(s) (specific as to section):

Procedure Y50-53-SO-031, "Surveillance of Criticality Accident Alarm System for Building 9204-2E"

Y/TS-1314, "Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Areas"

Finding X Observation: _____

Discussion:

Procedure Y50-53-SO-031 did not contain the requirements of OSR Y/TS-1314 applicable to CAAS surveillance testing. Although the OSR was referenced in the procedure, specific requirements and steps relating to Limiting Conditions of Operation (LCO) were not in the procedure. The specific OSR is 3.1.2, which includes time limits for detector and alarm signal inoperability and the actions necessary to address a deficient condition.

Finding Designation: Prestart X Post-Start _____	Inspector: /M Clevis
Group Leader: /M Clevis Date: 1/24/96	Approved by: J P F RA Team Manager Date: 1/24/96

Form 2

RA DEFICIENCY FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 24, 1996 ID #: RA-OP-1-5

Requirement:

A viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Reference(s) (specific as to section):

CO-7
DOE 5480.19, Chapter XVI
Procedure Y10-189, "Document Control"

Finding X Observation: _____

Discussion:

The control and issuance of procedures and procedure revisions by the Quality Organization is not in accordance with Y10-189 requirements. Examples included:

a. No designated Document Management Center

b. Front pages of each procedure were not stamped "Controlled Copy" and did not have unique numbers assigned.

c. Distribution lists and status records were not maintained for controlled procedures.

Finding Designation: Prestart X Post-Start _____	Inspector: Bruce A. Wilson
Group Leader: J M Quinn Date: 1/24/96	Approved by: J P Flynn RA Team Manager Date: 1/24/96

Form 2

RA DEFICIENCY FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-5 (CO-28)	Date: January 22, 1996 ID #: RA-OP-5-1

Requirement:

An adequate start-up or restart test program has been developed that includes adequate plans for graded operations testing. This includes verification that the applicable calibrations, corrective maintenance, preventive maintenance, surveillances, and safety inspections have been completed.

Reference(s) (specific as to section):

Plan of Action, CO-28

Finding X Observation: _____

Discussion:

A walk down was performed in the dimension inspection and ultrasonic areas of 9204-2E that are the responsibility of the Quality Organization and in areas of the MAA that are the responsibility of DSO. Lists of equipment required for restart were compared against equipment in the field and MJR lists. Numerous discrepancies were identified. These discrepancies involved equipment not on the restart list, that was not tagged with Administrative Control tags. In addition, a memorandum, dated January 22, 1996, identified 18 line items of equipment with outstanding MJRs that are tied to D&A restart. Six of the 18 items included the Kathabar System, which is required to be operable to maintain strict temperature and humidity conditions.

Finding Designation: Prestart X Post-Start _____	Inspector: Bruce A. Wilson
Group Leader: [illegible] Date: 1/23/96	Approved by: J. P. Flynn RA Team Manager Date: 1/23/96

Form 2

RA DEFICIENCY FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-04)	Date: January 23, 1996 ID #: RA-SE-1-3

Requirement:

The OSR can be technically accomplished.

Reference(s) (specific as to section):

Procedures ESPS-FO-003, ESPS-FO-004, ESPS-FO-005, and ESPS-FO-006

Finding X Observation: _____

Discussion:

A "modified" quarterly firecycle surveillance test in building 9204-2E was performed to demonstrate that this test can be satisfactorily accomplished consistent with the requirements in the OSR. Normally, two building 9204-2E systems are tested together using this procedure. However, it was understood by both the facility operations and the fire protection departments that a "modified," one system test would be performed for demonstration purposes. The shift manager confirmed that he did not intend to use this test to satisfy the quarterly surveillance test requirement.

The procedure did not allow for a single system test. Neither operations nor fire protection department personnel (at any level in the hierarchy) challenged the appropriateness of using this procedure for performing a single system test. Also, although not currently required by the procedure, but considered a good conduct of operations practice, a permanent member of the operations staff did not witness the test or visually confirm the system's return to safe service after the test was completed. Similar deficiencies exist in procedures ESPS-FO-003, ESPS-FO-004, and ESPS-FO-005.

The issues regarding this finding are summarized as follows:

a. The monthly, quarterly, and annual fire protection surveillance tests do not provide for all feasible test conditions. Furthermore, these procedures do not require operations personnel to field-verify the test results or the proper return of the system(s) to service.

RA DEFICIENCY FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-04)	Date: January 23, 1996 ID #: RA-SE-1-3

b. Operations and fire protection personnel did not take the appropriate actions when the surveillance test procedure requirements could not be met and verbatim compliance was not possible.

Finding Designation: Prestart ___X___ Post-Start ______	Inspector: [signature]
Group Leader: [signature] Date: 1/24/96	Approved by: [signature] RA Team Manager Date: 1/24/96

Form 2

RA DEFICIENCY FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-2 (CO-10)	Date: January 23, 1996 ID #: RA-SE-2-1

Requirement:

A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, safety-related process systems, and safety-related utility systems.

Reference(s) (specific as to section):

Procedures ESPS-FO-013, ESPS-FO-014, ESPS-FO-015, ESPS-FO-016, ESPS-FO-018, ESPS-FO-019, and ESPS-FO-020

Finding X Observation: _____

Discussion:

Fire protection preventive maintenance procedures do not exist, preventive maintenance has not been performed on the related systems, and current commitment dates for completion will not be met.

The fire protection department has committed to the development of at least seven fire protection system preventive maintenance procedures by April 30, 1996. Presently, none of these procedures have been issued for use, nor has the associated preventive maintenance been performed on the associated systems. Most of the procedures are either still under development, with only a few that may be close to entering the review and approval cycle. During an interview, a senior procedure writer stated that the April 1996 date will not be met, and an extension will have to be requested. Because of limited resources and higher priorities, he could not speculate on a new date for completion at this time.

Finding Designation: Prestart _____ Post-Start X	Inspector: [signature]
Group Leader: [signature] Date: 1/24/96	Approved by: [signature] RA Team Manager Date: 1/24/96

Form 2

RA DEFICIENCY FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-04)	Date: January 21, 1996 ID #: RA-SE-1-1

Requirement:

Requirements of the OSR can be technically accomplished.

Reference(s) (specific as to section):

Procedure Y50-53-SO-031, "Surveillance of CAAS for Building 9204-2E"

Drawings E2E92042EA099, E2E92042EA100, E2E92042EA101

Finding_____ Observation: X

Discussion:

The "zone maps" used by the surveillance teams for the CAAS quarterly surveillance test to locate audible and visual alarms were not always accurate or optimally established. The following examples of zone map deficiencies were noted:

a. Drawing number E2E92042EA100 shows only two audible alarms in Zone #8 to be verified during the test. While examining the two audible alarms in Zone #8 prior to activation, the surveillance team noticed an adjoining room with an additional audible alarm that appeared on drawing number E2E92042EA100 for Zone #11. Because of the current layout of the room, this alarm could not be readily accessed from Zone #11 by the responsible surveillance team during a test of the CAAS. Removal of this alarm from Zone #11 and adding it to Zone #8 would seem prudent.

b. During a pre-test briefing by the zone leader, the Zone #21 surveillance team was instructed to also check speaker #1, which is in the area but shown on drawing number E2E92042EA099 for Zone #16, i.e., this speaker does not currently appear on drawing number E2E92042EA101 for Zone #21. The rationale for this deviation was that most of the alarms in Zone #16 are inside the material access area with speaker #1 as a notable (outside) exception. Therefore, during a surveillance test, the Zone #16 surveillance team would have a difficult time accessing Speaker #1, but the Zone #21 team would not.

Finding Designation: Prestart_____ Post-Start_____	Inspector: [signature]
Group Leader: [signature] Date: 1/22/96	Approved by: [signature] RA Team Manager Date: 1/22/96

Form 2

RA DEFICIENCY FORM

Functional Area: Training TQ	CRA Number/Title: TQ-1 (CO-13)	Date: January 17, 1996 ID #: RA-TQ-1-1

Requirement:

Qualification and certification of personnel shall be documented in an easily auditable format. Individual record documentation shall include the following at a minimum: two training programs completed and qualification/certification achieved.

Reference(s) (specific as to section):

DOE 5480.20A, Chapter I.15.a.(2)
DOE 5480.20A, Chapter I.15.b

Finding X Observation: _____

Discussion:

Not all Quality Organization personnel identified as requiring qualification/certification have evidence of qualification/certification in their personnel training records. Specific examples include one radiographer with no evidence of certification and two engineers with no record of qualification.

Finding Designation: Prestart X Post-Start _____	Inspector: [illegible]
Group Leader: [illegible] Date: 1/23/96	Approved by: [illegible] RA Team Manager Date: 1/23/96

Form 2

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 17, 1996 ID #: RA-TQ-1-2

Requirement:

Comprehensive written and oral examinations and operational evaluations shall be prepared and administered to demonstrate that certified operator and certified supervisor candidates possess the required knowledge and skills. Certification may be granted only after all qualification requirements (including written and oral examination and operational evaluations) and other specified requirements...

Reference(s) (specific as to section):

DOE Order 5480.20A, Chapter I.8
DOE Order 5480.20A, Chapter I.6.b

Finding X Observation: _____

Discussion:

The comprehensive examination for a metallurgist was not properly graded. A recount of the items missed resulted in a failing score for that section of the examination. A remedial examination was not given for the failed section. Since satisfactory completion of a comprehensive examination is a prerequisite for certification, the metallurgist should now be considered decertified.

Finding Designation: Prestart X Post-Start _____	Inspector: [signature]
Group Leader: [signature] Date: 1/20/96	Approved by: [signature] RA Team Manager Date: 1/21/96

Form 2

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 19, 1996 ID #: RA-TQ-1-3

Requirement:

Certified operators, fissionable material handlers, and certified supervisors shall actively perform job functions associated with their certification to maintain proficiency. The operating organization shall establish procedures that define requirements and frequency (e.g., 8 hours per month) necessary to maintain an active status.

Reference(s) (specific as to section):

DOE Order 5480.20A, Chapter IV.5
DOE Order 5480.20A, Chapter IV.5.a

Finding X Observation: _____

Discussion:

The Quality Organization has not established procedures that define required activities and the frequency at which these activities must be performed to maintain an active status as a certified fissile material handler.

Finding Designation: Prestart X Post-Start _____	Inspector: [signature]
Group Leader: [signature] Date: 1/23/96	Approved by: [signature] RA Team Manager Date: 1/23/96

Form 2

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 17, 1996 ID #: RA-TQ-2-1

Requirement:

Operating organizations shall define qualification requirements for personnel in each functional level.

Reference(s) (specific as to section):

DOE Order 5480.20A, Section I.5.a

Finding X Observation: _____

Discussion:

The qualification requirements for the assemblyperson dismantlement position did not include training that had been identified by the operating organization as being required for qualification/certification. Personnel were certified without having met all of the identified qualification requirements. Specific omissions included training on operation of leak detectors and SAM-2 meters, preparation and application of adhesives, packing of components for shipping, operation of CNC South Bend lathe, and preparation and utilization of vacuum cans.

Finding Designation: Prestart X Post-Start _____	Inspector: [illegible]
Group Leader: [illegible] Date: 1/19/96	Approved by: [illegible] RA Team Manager Date: 1/19/96

Form 2

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 22, 1996 ID #: RA-TQ-2-2

Requirement:

Personnel who are in training shall not independently make decisions or take actions that could affect facility safety, nor shall personnel who are in training be placed in such positions.

Reference(s) (specific as to section):

DOE Order 5480.20A, Chapter I.7.c.

Finding X Observation: _____

Discussion:

Controls that ensure only qualified/certified personnel perform activities requiring qualification/certification have not been sufficiently established in the Facilities Maintenance Organization (FMO). The lack of documentation of key training requirements (e.g., fire protection system) precluded implementation of an effective control system. In addition, qualification requirements based on analysis have not been fully implemented in the FMO training program. Current qualification requirements are not updated with new analysis data.

Finding Designation: Prestart X Post-Start _____	Inspector: [signature]
Group Leader: [signature] Date: 1/23/96	Approved by: [signature] RA Team Manager Date: 1/23/96

Form 2

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 22, 1996 ID #: RA-TQ-2-3

Requirement:

N/A

Reference(s) (specific as to section):

N/A

Finding_____ Observation: ____X____

Discussion:

The training programs for DSO and QO do not contain fundamental and system training. The training programs consist almost entirely of health and safety compliance-based training and procedure-based training involving performance documentation check lists. Little attention has been given to fundamentals training and training that instructs operators on how and why systems, equipment, and processes function. Without fundamental training and integrated system training, the trainees may not be fully knowledgeable of procedural requirements, purpose, and response to unexpected or abnormal situation.

Finding Designation: Prestart_____ Post-Start_____	Inspector: [illegible]
Group Leader: [illegible] Date: 1/23/96	Approved by: [illegible] RA Team Manager Date: 1/23/96

Form 2

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 22, 1996 ID #: RA-TQ-3-1

Requirement:

N/A

Reference(s) (specific as to section):

N/A

Finding_____ Observation: ____X____

Discussion:

Continuing training dates are not accurately and consistently identified. Continuing training dates are not consistent between qualification cards and TMS general requirement/qualification status reports (GRQ). Examples were found where the GRQ form "Requalify Date" exceeded the continuing training interval for the module. An assemblyperson's qualification card showed a 24-month recertification interval for module 9044 (License - Overhead Crane/Pendant), and the GRQ "Requalify Date" was November 20, 1998 (a 36-month interval). A DSO material controller's GRQ did not list a requalification date for module 6501 (SNM Locking Systems), and his qualification card indicated an annual recertification interval.

Finding Designation: Prestart_____ Post-Start_____	Inspector: [signature]
Group Leader: [signature] Date: 1/24/96	Approved by: [signature] RA Team Manager Date: 1/24/96

Form 2

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 22, 1996 ID #: RA-TQ-3-2

Requirement:

Continuing training programs shall be established to maintain and enhance the knowledge and skills of operating organization personnel who perform functions associated with engineered safety features as identified in the Facility Safety Analysis Report.

Reference(s) (specific as to section):

DOE Order 5480.20A, Chapter I.7.d

Finding X Observation: _____

Discussion:

The Quality Organization has not established and implemented a continuing training program.

Finding Designation: Prestart _____ Post-Start X	Inspector: [signature]
Group Leader: [signature] Date: 1/24/96	Approved by: [signature] RA Team Manager Date: 1/24/96

Form 2

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 22, 1996 ID #: RA-TQ-4-1

Requirement:

Comprehensive written and oral examination and operational evaluation shall be prepared and administered to demonstrate that certified operator and certified supervisor candidates possess the required knowledge and skills.

Reference(s) (specific as to section):

DOE Order 5480.20A, Chapter I.8

Finding X Observation: _____

Discussion:

Problems were found in the administration, grading, and recording of examinations that lead to qualification/certification in the Quality Organization. One radiographer's comprehensive examination had two questions marked as "NA." This was done after one question (with 13 parts) had been answered and eight of the 13 choices were wrong. A module 7958 examination (50 questions) had one question marked "invalid" by the instructor, and the test score of 80 percent was calculated with the "invalid" question included in the denominator. Identical questions were used on one exam. One remediation exam given was identical to the failed examination.

Finding Designation: Prestart X Post-Start _____	Inspector: R. K. McCarthy
Group Leader: [illegible] Date: 1/23/96	Approved by: [illegible] RA Team Manager Date: 1/23/96

Form 2

APPENDIX D

Readiness to Proceed Memo

MARTIN MARIETTA

Internal Correspondence

MARTIN MARIETTA ENERGY SYSTEMS, INC.

Date: January 12, 1996

To: J. P. Flynn

cc: J. T. Fisher, F. P. Gustavson, M. K. Morrow, P. R. Wasilko

From: R. K. Roosa, 9113, MS-8208 (4-3793) - RC

Subject: **Readiness to Proceed - Lockheed Martin Energy Systems, Inc., Readiness Assessment**

The Disassembly and Storage Management Self Assessment (MSA) was completed on December 8, 1995. The results are documented in *Management Self Assessment Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant, Y/OA-6248*. In summary, a total of 32 findings were received; 27 were screened as pre-restart and 5 were screened as post-restart. Of the 27 pre-restart findings, 26 are closed. The remaining finding deals with incorporating limits and conditions from Criticality Safety Approvals into procedures. The limits and conditions have been incorporated into the procedures that will be used for the Readiness Assessment. This will be completed for the remaining procedures by March 1, 1996.

During the MSA, execution of procedures in a step-by-step manner was noted as a significant weakness. Since the completion of the MSA, the procedures have been revised and additional dry runs conducted under the scrutiny of MSA team members. A continual maturation in executing these procedures has been noted.

Based on the closure status of the MSA finding and improvements made in procedure execution, I feel that we are ready to proceed with the Lockheed Martin Energy Systems, Inc., readiness on January 15, 1996.

If you have further questions, please contact P. R. Wasilko at 4-0499.

RKR:gfp

Concur: _____ 1/13/96

F. P. Gustavson
Vice President
Defense and Manufacturing

Date

Addendum to Enclosure 2
Ltr: Gustavson to Spence
Dated February 23, 1996

96/1570

LOCKHEED MARTIN

Memorandum

Date: February 22, 1996

To: F. P. Gustavson

From: JPF J. P. Flynn, 701 SCA, MS-8241, 6-4614

Subject: **Readiness Assessment Report for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant**

In accordance with R. K. Roosa's memo of January 12, 1996, a readiness assessment (RA) was conducted for Disassembly/Assembly Activities on January 15-26, 1996. Due to the fact the RA team determined that the Quality Organization (QO) was not prepared to resume operations, four members of the team returned on February 19-20, 1996 to reassess QO.

The results of this reassessment are contained in the attached addendum to the original report Y/OA-6249.

JPF:lhs

Attachment

Y/OA-6249
ADDENDUM

Lockheed Martin Energy Systems, Inc.
Readiness Assessment Report
for the
Resumption of
Disassembly/Assembly Activities
at the
Oak Ridge Y-12 Plant

January 19-20, 1996

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I, by signature here, acknowledge that I concur with the findings and conclusions of this addendum:

N. T. Ford
Training/Qualification

H. A. Oliver III
Operations/Procedures

B. A. Wilson
Operations/Procedures

APPROVED: _____ DATE: 2/22/96

J. P. Flynn, RA Team Manager

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SUMMARY AND CONCLUSIONS

The Lockheed Martin Energy Systems, Inc. (LMES), Independent Readiness Assessment (RA) for resumption of disassembly/assembly (D&A) activities was conducted January 15-26, 1996. That RA team determined that, prior to resuming Quality Organization (QO) activities associated with D&A, the QO activities in the areas of procedures, training, and Criticality Safety Approvals (CSA) should be reassessed by the RA team.

This reassessment was conducted by the three team members who previously looked at those areas and the team manager on February 19-20, 1996. The RA team used the Criteria and Review Approach Documents used during the original RA (OP-1, TQ-1, TQ-2, TQ-3 TQ-4, TQ-5) to assess these areas.

The team had the following prestart findings:

- RA-OP-1-6 Procedure Y50-55-DI-008 did not contain necessary CSA requirements.
- RA-OP-1-7 Revisions to CSAs required for resumption had not been made.

The team concluded that the areas of training and procedures were lacking in the formal controls necessary to support long-term operation. However, the team believes that adequate interim measures are in place to warrant continuation of resumption activities once prestart findings are resolved.

Specifically, the team believes that the following interim measures must remain in place until long-term corrective actions are implemented:

TRAINING

- The QO training manager position must continue to be filled by an individual with qualifications comparable to the individual (R. M. Mack) presently filling the position on an interim basis.
- QO management must periodically monitor activities to ensure the interim measures remain effective.

PROCEDURES

- The Document Management Center must continue to be staffed by an individual with qualifications comparable to the existing division procedure coordinator, A. F. Zerby.
- QO management must periodically monitor procedure control activities to ensure the interim measures remain effective.

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APPENDIX A

Assessment Forms
(Form 1)

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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96

Method of Appraisal (short narrative description):

Objective

CO-7 There are adequate and correct procedures for operating systems and utility systems. (CR-1)

Criteria

1. Criticality Safety Approvals (CSA) and operating procedures are technically accurate, consistent with each other, and incorporate appropriate safety limits.

2. A viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Approach

Record Review:

1. Review the engineering analysis for five CSAs to verify all technical requirements have been included in the CSAs.

2. Compare each operating procedure with its associated CSA to verify they are consistent with each other.

3. Compare each operating procedure with its applicable OSR to verify it incorporates appropriate safety limits.

4. Review site and/or divisional procedure(s) to verify a viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Interviews:

None

Shift Performance:

1. Walk down each CSA to verify the conditions in the field match the conditions required in the CSA.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96

2. Walk down the five latest procedure revisions through the approval, issuance, training, and use process to verify the procedure revisions system works correctly in a timely manner and is viable.

3. Observe at least three simulations/evolutions to verify personnel are using the latest procedures, and the procedures are adequate and correct.

Personnel contacted/position:

- A. K. Zava, Quality Organization (QO) manager
- J. P. Stanley, materials and equipment evaluation department manager
- K. F. Kesterson, materials testing laboratory supervisor
- R. P. Allen, mechanical/physical properties technician
- W. B. Johnson, mechanical/physical properties technician
- R. L. Jackson, LMES lead, document control
- A. F. Zerby, QO procedures coordinator
- J. R. Adcock, QA specialist (on loan to QO)
- B. L. Witt, physical testing alternate supervisor
- M. K. Waters, radiographer
- B. G. Elkins, radiographer
- J. A. Hummel, radiographer
- C. C. Blankenship, dimensional inspection supervisor
- D. E. Riggs, dimensional inspector
- C. A. Begley, inspection methods engineer
- M. E. Wagoner, mentor
- J. D. Brasfield, mentor
- S. L. Chapman, training and procedures manager

Records & other documents reviewed:

- Procedure Y50-55-PT-437, "Tensile Testing of Various Materials"
- CSA PT-MT-102, "Materials Testing Laboratory Operations"
- QO Standing Order 96-02, Rev. 0 and Rev. 1, "Control of Quality Procedures"
- Memo to File: February 13, 1996, DMC Standard Distribution Lists
- Procedure Y10-55-012, "Quality Organization Command Media Control System"
- Procedure Y50-55-PT-374, "Operation of 9MEV Linac 9204-2E"
- Radiography product procedure
- CSA PT-RAD-200, "9204-2E Radiography, Handling, and Storage"
- CSA PT-RAD-205, "Vibration Test"
- Procedure Y50-55-DI-008, "Operation of Optical Comparators in Manual Mode"
- CSA DI-B2E-100, "Fissile Floor Arrays and Workstations"

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96

- CSA PT-PLT-100, "Fissile Material Loading Limits"
- CSA PT-PLT-400, "Contaminated Combustibles and Noncombustibles"
- CSA PT-ULTR-200, "Ultrasonic W-Testing and Fissile Storage Arrays"
- Awareness training handouts for Standing Order 96-02

Evolutions/operations witnessed:

- Tensile testing of stainless steel specimen
- Radiography of mockup
- Manual measurements using optical comparator

Discussion:

1. Two technicians were observed performing tensile testing of a stainless steel specimen on a Tinius Olsen 30K machine. The QO manager, group manager, and supervisor were present throughout the testing. Testing was conducted using a reader-worker method of performing Class III procedure Y-50-55-PT-437. No deficiencies were noted.

2. CSA PT-MT-102 was walked down. No deficiencies were noted. Revisions to CSAs DI-B2E-100, PT-PLT-100, PT-PLT-400, PT-RAD-200, PT-RAD-205, and PT-ULTR-200 were undergoing field verification (see RA-OP-1-7).

3. The team reviewed the above documentation and interviewed QO personnel regarding corrective actions for the procedure and document control system. Short-term corrective actions had been implemented to ensure that QO personnel had access to the latest versions of controlled documents. These actions included designating a document management center (DMC), maintaining properly identified controlled copies at the DMC, performing an audit against procedure Y10-189, "Document Control," and issuing a standing order to establish the control and issuance of procedures.

4. The procedure control process was verified with one supervisor following the tensile testing evolution. Controlled copies of the required procedures were maintained, and the supervisor was aware of requirements for working copies. In implementing this system, however, he was required to maintain controlled copies of many procedures he was not responsible for. Also, each supervisor had to obtain a current list of QO procedures each day from the procedures coordinator. This requirement was stipulated in an awareness training session but was not documented through command media.

5. The list of required procedures identified to the team on February 19 was supposed to include all procedures listed in the Plan-of-Action (POA). Three procedures on the list were not in the

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96

POA (Y10-55-DI-029, Y50-55-PT-420, and Y50-55-PT-433), and one was in the POA and not on the list (Y50-55-PT-435). A letter has been drafted and will be signed by Mr. Gustavson removing procedure Y50-55-PT-435, "Dye Penetrant Testing," from the list of resumption procedures in the POA. The other three procedures are additions and are not a decrease in commitments.

6. A Surveillance Plan, dated February 14, 1996, stated that a QO internal division procedure (Y10-55-012) to incorporate changes in the document control process had been revised on February 13, 1996. QO personnel said this statement was not correct, the procedure was undergoing revision, and the surveillance plan statement would be corrected. In addition, quality management is evaluating the usefulness of procedure Y10-55-012 in light of other governing procedures.

7. The same Surveillance Plan stated that the scope included..."the extent to which the Quality Organization meets the requirements..." of procedure Y10-189, "Document Control." However, the plan only looked at procedures and not control of other documents such as CSAs and OSRs.

8. Short-, intermediate-, and long-term corrective actions were discussed with the manager of training and procedures. QO management intends to formalize the intermediate and long-term plans in a document that will be provided to the assessment team prior to the conclusion of this follow-up visit.

9. During observation of the use of the optical comparator, the supervisor used a controlled copy rather than a working copy of the applicable procedure, Y50-55-DI-008. This was permissible according to Rev. 0 of Standing Order 96-02; however, Rev. 1 of this standing order will only allow use of a working copy obtained from the DMC.

10. Two radiographers were observed performing radiography of a mockup using the 9MEV Linac. A third radiographer demonstrated reading and interpretation of radiographs taken recently on the same mockup during procedure verification. The alternate supervisor gave a thorough pre-job briefing and was present throughout the observation. The department manager and two mentors were present during radiography. Radiography was demonstrated in a disciplined and professional manner. CSA requirements were contained in the product procedure. No deficiencies were noted.

11. One dimensional inspector was observed performing manual measurements using an optical comparator. His supervisor gave the pre-job briefing and was present throughout the demonstration. The inspection methods engineer and two mentors were also present throughout the observation. Measurements were performed correctly, and necessary rigor was demonstrated. One deficiency was noted: procedure Y50-55-DI-008 did not contain applicable CSA

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96

requirements, although the optical comparator can serve as a fissile work station (see RA-OP-1-6).

Conclusions:

CSAs and Procedure Use

1. The level of rigor and discipline in the activities observed was satisfactory to warrant resumption of operations within the Quality Organization. Pre-job briefings were thorough. Guidance and direction provided by supervisors and mentors were timely and correct.

2. Revised CSAs must be field verified, issued, and made effective, including training of personnel.

Procedure Control

1. The short-term corrective actions provide reasonable assurance that QO personnel will use the current, approved, and correct version of approved procedures. This conclusion is based on the following:

   a. establishment of a Document Management Center (DMC) staffed by a division procedure coordinator

   b. performance of a surveillance to identify non-compliances with procedure Y10-189

   c. development of corrective actions based on that surveillance

   d. issuance of a standing order to establish control of the issuance of procedures and procedure revisions

   e. performance of training of QO personnel on the contents of the standing order

   f. observations of evolutions and interviews of QO personnel

2. Intermediate and long-term corrective actions are necessary to provide confidence that the document control system will continue to function as required and improve. The intermediate corrective actions should include the following as a minimum:

   a. assurance that the position of division procedure coordinator will remain filled by a comparably qualified person

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96

b. development and implementation of a corrective action program that will focus on full compliance with procedure Y10-189

c. dedication of additional resources as deemed necessary

d. periodic monitoring by QO management to ensure the short-term corrective actions remain effective

The long-term corrective actions should include participation in the development of a site-wide document control system that meets the needs of resumed facilities.

Inspected by: H. A. Oliver III B. A. Wilson	Approved by: _____ RA Team Manager Date: 2/22/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: 2/21/96

Method of Appraisal (short narrative description):

Objective

CO-13 Training and qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)

Criteria

1. Training and qualification requirements have been implemented according to the schedule outlined in the Y-12 Plant Training Implementation Matrix (TIM).

2. Compliance with the TIM schedule is current.

3. Training and qualification of personnel is at a level sufficient to support resumption, or appropriate compensatory measures are in place.

Approach

Records Review:

1. Review training and qualification program procedures to verify requirements have been implemented according to the schedule outlined in the TIM.

2. Review training and qualification records to verify compliance with the TIM schedule.

3. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption. If deficiencies exist, review records that show line managers have approved and put in place appropriate compensatory measures.

4. Review records to determine the following:

   a. Content of training programs is determined by systematic analysis.

   b. Qualification requirements (especially those leading to certification) and medical requirements are clearly specified.

   c. Division training staff qualification requirements have been met.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: 2/21/96

d. Verification of qualification requirements leading to certification has been conducted.

e. A graded approach is used to establish program content.

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption and they understand any compensatory measures in place.

Shift Performance:

Observe operators, support personnel, and line managers performing/simulating at least three operations to verify their level of training and qualification is sufficient to support resumption and they understand any compensatory measures in place.

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member
- S. L. Chapman, QO training manager
- M. A. Childs, training consultant
- J. L. Mincy, corrective actions

Records & other documents reviewed:

- Letter, February 14, 1996, D&A file, summary of the programmatic requirements of the Y-12 Quality Organization personnel supporting Disassembly and Assembly activities
- QA/QO personnel needed to perform D&A operations, 10/27/95
- Proposed QO training manager rolls and responsibilities, 2/7/96
- Training program execution, 2/1/96
- Quality training team evaluation, 2/8/96
- Quality Training Development and Administration Guide (TDAG) (proposed revision), 2/8/96
- Y-12 Non-Reactor Nuclear Facility Quality Organization Training Plan (Rev. 1), October 31, 1995
- Training Development and Administration Guide (TDAG) for Y-12 Quality Organization - Disassembly and Assembly Resumption Training Criteria, Rev. 2, February 1996
- Letter, February 7, 1996, Frank Denny, recommendations to address Y-12 Quality Organization training program deficiencies (w/enclosures)

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: 2/21/96

- Letter, February 5, 1996, S. L. Chapman, R. O. McClosky, R. J. Graham, report of QO D&A training and qualification records review
- Quality Organization standing order number 96-03, Rev. 0, "Administration of Examinations"
- Quality Organization standing order 96-01, Rev. 0, "Qualification Proficiency Requirements"

Evolutions/operations witnessed:

- See OP-1

Discussion:

1. Ralph Mack, RA recovery team leader, and B. H. Poole, RA recovery team member, were interviewed. Both have a good understanding of the qualification/certification process.

2. The Quality Organization revised training program was developed and implemented by the recovery team.

3. The Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization met the immediate need of the organization, but it did not specifically describe how the organization implemented training requirements.

   For example, the TDAG referred to the "Y-12 Plant Y90 series" for program development. The Y90 series did not specifically indicate who in QO had authority to direct and approve program development. The TDAG also indicated that the QO training program was based on needs analysis, job analysis, and task analysis, but did not specify when or why each type of analysis was used. It referred to Y90-40, "Conduct of Training Analysis," for methods and criteria. Y90-40 listed many types of analyses and did not specifically state the ones used to develop the QO program.

   The TDAG discussed continuing training, but did not address examination requirements, drill requirements, and exemption requirements.

   The RA recovery team is adequately qualified to administer the training program and to compensate for the weakness in the command media.

Conclusions:

1. The short-term corrective actions provide reasonable assurance that the Quality Organization (QO) Training Program will be compliant with applicable training requirements. This conclusion is based on the following:

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: 2/21/96

a. assignment of an interim training manager, in that the TQ-RA recovery team leader is functioning as the QO training manager

b. development of the Quality Training, Development and Administration Guide (TDAG), Rev. 2, February 1996

c. issuance of Quality Organization Standing Order 96-01 "Qualification Proficiency Requirements" and Quality Organization Standing Order 96-03 "Administration of Examinations"

d. performance of a surveillance to identify programmatic and record deficiencies

e. development of corrective actions based on that surveillance

f. interviews with TQ-RA recovery team personnel

2. Intermediate and long-term corrective actions are necessary to provide confidence that the QO Training Program will continue to function as required and improve. The intermediate corrective actions should include the following as a minimum:

a. assurance that position of QO training manager will remain filled by a comparably qualified person

b. development and implementation of a corrective action program that will focus on full compliance with applicable training requirements

c. dedication of additional resources as deemed necessary

d. periodic monitoring by QO management to ensure the short- and long-term corrective actions remain in effect

Inspected by: N. T. Ford	Approved by: _____ RA Team Manager Date: 2/22/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: 2/21/96

Method of Appraisal (short narrative description):

Objective

CO-14 Technical qualifications of contractor personnel responsible for facility operations are adequate. (CR-19)

Criteria

1. Compliance with the TIM schedule is current. (See CO-13.)

2. Training and qualification of personnel is at a level sufficient to support resumption. (See CO-13.)

3. Personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operations.

4. Applicable non-reactor nuclear facility managers, supervisors, operators, technicians, maintenance support, and technical support personnel are evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

Approach

Record Review:

1. Review training and qualification program procedures to verify compliance with the TIM schedule. (See CO-13.)

2. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption.

3. Review records that demonstrate line management has put in place controls to ensure personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operation.

4. Review records that demonstrate appropriate personnel have been evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: 2/21/96

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption. Also verify they know that if personnel do not meet the current qualification requirements for a particular operation, they shall have a qualified individual with them while performing that particular operation. (See CO-13.)

Shift Performance:

Observe operations, support personnel, and line managers performing operations to verify their training and qualification are at a level sufficient to support resumption. (See CO-13.)

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member
- M. A. Childs, training consultant
- J. L. Mincy, corrective actions

Records & other documents reviewed:

- Letter, February 14, 1996, D&A file, summary of the programmatic requirements of the Y-12 Quality Organization personnel supporting Disassembly and Assembly activities
- QA/QO personnel needed to perform D&A operations, 10/27/95
- Proposed QO training manager rolls and responsibilities, 2/7/96
- Training program execution, 2/1/96
- Quality training team evaluation, 2/8/96
- Quality Training Development and Administration Guide (TDAG) (proposed revision), 2/8/96
- Y-12 Non-Reactor Nuclear Facility Quality Organization Training Plan (Rev. 1), October 31, 1995
- Training Development and Administration Guide (TDAG) for Y-12 Quality Organization - Disassembly and Assembly Resumption Training Criteria, Rev. 2, February 1996
- Letter, February 7, 1996, Frank Denny, recommendations to address Y-12 Quality Organization training program deficiencies (w/enclosures)
- Letter, February 5, 1996, S. L. Chapman, R. O. McClosky, R. J. Graham, report of QO D&A training and qualification records review
- Quality Organization standing order number 96-03, Rev. 0, "Administration of Examinations"
- Quality Organization standing order 96-01, Rev. 0, "Qualification Proficiency Requirements"

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: 2/21/96

Evolutions/operations witnessed:

- See OP-1

Discussion:

1. The Quality Organization standing orders on examination requirements and proficiency requirements were reviewed. Both orders were found to be adequate. However, the standing order on examination administration requirements lacked detail. Specifically, the standing order stated that if an incumbent demonstrated a weakness in a particular area of a comprehensive examination, the incumbent should be remediated. The standing order did not give guidance on when it was appropriate to remediate using a written examination or simply conduct a one-on-one discussion.

2. The standing orders should eventually be incorporated into the TDAG. QO plans to revise the TDAG in the near future. This revision should concentrate on expanding the program element discussions to include more detail on specifically how the organization implements the requirements.

Conclusions:

1. The short-term corrective actions provide reasonable assurance that the Quality Organization (QO) Training Program will be compliant with applicable training requirements. This conclusion is based on the following:

    a. assignment of an interim training manager, in that the TQ-RA recovery team leader is functioning as the QO training manager

    b. development of the Quality Training, Development and Administration Guide (TDAG), Rev. 2, February 1996

    c. issuance of Quality Organization Standing Order 96-01 "Qualification Proficiency Requirements" and Quality Organization Standing Order 96-03 "Administration of Examinations"

    d. performance of a surveillance to identify programmatic and record deficiencies

    e. development of corrective actions based on that surveillance

    f. interviews with TQ-RA recovery team personnel

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: 2/21/96

2. Intermediate and long-term corrective actions are necessary to provide confidence that the QO Training Program will continue to function as required and improve. The intermediate corrective actions should include the following as a minimum:

   a. assurance that position of QO training manager will remain filled by a comparably qualified person

   b. development and implementation of a corrective action program that will focus on full compliance with applicable training requirements

   c. dedication of additional resources as deemed necessary

   d. periodic monitoring by QO management to ensure the short- and long-term corrective actions remain in effect

Inspected by: N. T. Ford	Approved by: _____ RA Team Manager Date: 2/22/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: 2/21/96

Method of Appraisal (short narrative description):

Objective

CO-16 Training has been performed to the latest revision of procedures. (CR-18)

Criteria

All applicable personnel have been trained to the latest revision of the procedure.

Approach

Record Review:

1. Verify line management has designated in writing personnel who are necessary to perform specified tasks.

2. Review personnel training and qualification records to verify the personnel who are designated to perform specific tasks have been trained to the latest revision of the procedures applicable to each task.

3. Verify that continuing training programs are established and implemented.

Interviews:

None

Shift Performance:

Observe at least three simulations/evolutions to verify that personnel conducting the simulations/evolutions are designated in writing to perform them and have been trained to the latest revision of the applicable procedure.

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member
- M. A. Childs, training consultant
- J. L. Mincy, corrective actions

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: 2/21/96

Records & other documents reviewed:

- Letter, February 14, 1996, D&A file, summary of the programmatic requirements of the Y-12 Quality Organization personnel supporting Disassembly and Assembly activities
- Training Development and Administrative Guide (TDAG) for Y-12 Quality Organization - Disassembly and Assembly Resumption Training Criteria, Revision 2, February 1996
- QA/QO personnel need to perform D&A operations, 10/27/95

Evolutions/operations witnessed:

- See OP-1

Discussion:

1. The TDAG (Rev. 2) and a list of QA/QO personnel needed to perform D&A operations were reviewed. These documents indicated that line management had designated in writing personnel needed to perform specified tasks.

2. Personnel listed as supporting three typical evolutions were checked for training to the required procedures. These procedures and associated training module numbers were Y50-55-PT-457 (Tensile), module 14003; Y50-55-PT-374 (Radiograph), module 14765; Y50-55-01-023 (Mauser), program 6243. All personnel checked were current in their specific training.

3. The status of continuing training program was checked. Fixed and flexible training components (training modules) had been identified. However, not all of the planned programmatic elements of the program were complete. The TDAG did not give specific guidance on how the continuing training program was implemented. Specifically, guidance on continuing training examination requirements, drills, and exemption requirements was not addressed in the TDAG.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: 2/21/96

Conclusion:

Because of the weakness of the TDAG, the continuing training program has not been fully established in the Quality Organization. Additional detailed guidance on program implementation is needed before the QO continuing training program can become functional and compliant with applicable training requirements. The closure criteria for the LMES RA-TQ-3-2 continuing training program (poststart finding) have not been completed.

Inspected by: N. T. Ford	Approved by: _____ RA Team Manager Date: 2/22/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: 2/21/96

Method of Appraisal (short narrative description):

Objective

CO-17 Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance. (CR-3)

Criteria

Evaluate required facility-specific knowledge of operations personnel by observations of the performance of simulations, drills, and through oral interviews of the operating personnel.

Approach

Record Review:

1. Review documentation to ensure examination requirements for qualification/certification have been met.

2. Review records for objective evidence of the examination content, administration, grading, and success level of the candidate.

3. Review documentation to ensure examination content is based on requirement elements as appropriate to the position.

Interviews:

1. Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to determine if their level of knowledge is adequate.

2. Make a short comprehensive examination, which will be administered to a selected group of division personnel by management. Division manager will provide to the LMES RA team the completed examination. Use this information to determine the adequacy of facility-specific facility knowledge.

Shift Performance:

1. Observe at least three simulations/evolutions performed by operating personnel to verify facility-specific level of knowledge is adequate.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: 2/21/96

2. Observe at least two drills performed by operating personnel to verify facility-specific level of knowledge is adequate.

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member
- M. A. Childs, training consultant
- J. L. Mincy, corrective actions

Records & other documents reviewed:

- Five QO personnel training records

Evolutions/operations witnessed:

- See OP-1

Discussion:

1. Selected examinations of various operations personnel were reviewed. The level of knowledge of these personnel based on this review was adequate.

2. Interviews were conducted with TQ-RA recovery team members. All had an adequate understanding of the qualification/certification process. Personnel interviewed demonstrated exceptional knowledge of training fundamentals. In addition, the staff was experienced in nuclear facility training program implementation.

Conclusion:

The level of knowledge of operations personnel was evaluated during the LMES RA and found to be adequate. The level of knowledge of the RA recovery team was found to be adequate.

Inspected by: N. T. Ford	Approved by: _____ RA Team Manager Date: 2/22/96

Form 1

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-5 (CO-18)	Date: 2/21/96

Method of Appraisal (short narrative description):

Objective

CO-18 There are sufficient numbers of qualified personnel to support safe operations.

Criteria

The numbers and qualifications of operating personnel necessary to perform the specified tasks defined in the operating procedures are adequate for normal and postulated emergency conditions.

Approach

Record Review:

Verify the numbers and qualifications of operating personnel required in the operating procedures are adequate for normal and postulated emergency conditions.

Interviews:

None

Shift Performance:

1. Observe at least three simulations/evolutions to determine if the numbers and qualifications of operating personnel are adequate.

2. Observe at least two drills to determine if the numbers and qualifications of operating personnel are adequate.

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member

Records & other documents reviewed:

- QA/QO personnel needed to perform D&A operations, 10/27/95
- Five QO personnel training records

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-5 (CO-18)	Date: 2/21/96

Evolutions/operations witnessed:

- See OP-1

Discussion:

Staffing requirements documents and qualification records and reports were reviewed. No significant deficiencies were noted during the review. Additionally, there had been no significant changes that affected personnel requirements since the last LMES RA.

Conclusion:

The numbers and qualifications of personnel are adequate to support operations.

Inspected by: N. T. Ford	Approved by: _____ RA Team Manager Date: 2/22/96

Form 1

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APPENDIX B

Deficiency Forms
(Form 2)

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RA DEFICIENCY FORM

Functional Area: Procedures	CRA Number/Title: OP-1 (CO-7)	Date: February 21, 1996 ID #: RA-OP-1-6

Requirement:

There are adequate and correct procedures for operating systems.

Reference(s) (specific as to section):

Procedure Y50-55-DI-008, "Operation of Optical Comparators in Manual Mode"

CSA DI-B2E-100, "Fissile Floor Arrays and Workstations"

Finding X Observation: _____

Discussion:

Procedure Y50-55-DI-008 (with PMR 96-QO-0015, effective date February 17, 1996) did not contain the requirements of CSA DI-B2E-100.

Finding Designation: Prestart X Post-Start _____	Inspector: [signature]
Group Leader: [signature] Date: 2/21/96	Approved by: [signature] RA Team Manager Date: 2/21/96

Form 2

RA DEFICIENCY FORM

Functional Area: Procedures	CRA Number/Title: OP-1 (CO-7)	Date: February 21, 1996 ID #: RA-OP-1-7

Requirement:

All procedures, CSAs, OSRs identified as required for operation within the next 12 months have been reviewed, corrected, validated, and the most recent revisions are present in the workplace, as required.

Reference(s) (specific as to section):

Prerequisite PR-1, POA

DOE Order 5480.19, Chapter XVI

Finding X Observation: _____

Discussion:

Revisions to six CSAs required for resumption are not effective:

CSA DI-B2E-100, "Fissile Floor Arrays and Workstations"
CSA PT-PLT-100, "Fissile Material Loading Limits"
CSA PT-PLT-400, "Contaminated Combustibles and Noncombustibles"
CSA PT-RAD-200, "9204-2E Radiography, Handling, and Storage"
CSA PT-RAD-205, "Vibration Test"
CSA PT-ULTR-200, "Ultrasonic W-Testing and Fissile Storage Arrays"

Finding Designation: Prestart X Post-Start _____	Inspector: [signature]
Group Leader: [signature] Date: 2/21/96	Approved by: [signature] RA Team Manager Date: 2/21/96

Form 2

DOE F 1325.8
(4/93)

ATTACHMENT 3

96/1570

United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: February 22, 1996

REPLY TO ATTN OF: DP-81:Wellbaum

SUBJECT: **D&A READINESS TO RESTART**

TO: Robert J. Spence, Y-12 Site Manager, DP-81

The D&A facility is ready to restart, considering the current combination of LMES D&A operations managers, D&A operations mentors, and DOE Facility Representatives. We base this recommendation on the recent progress noted during assessed facility restart activities and performance during special package operations.

During the restart process and special package operations, we have conducted over 25 assessments of D&A operations. These assessments included DOE approved Quality Evaluation (QE) special operations: component unpacking, handling, radiography, dimensional inspection, packing and storage, along with component mockup disassembly, facility walkthroughs, radiological practices, procedure compliance, procedure technical adequacy, worker safety, safety envelope maintenance and conduct of operations. Numerous problems were found and corrective actions, including compensatory measures, were taken. The corrective actions have resolved the immediate and restart problems. Long term programmatic problems have been identified. Related long term corrective actions have been planned and scheduled.

From our viewpoint, the remaining most significant long term programmatic problems concern improving performance as operational activities increase. Programmatic improvements needed include:

1. A thin layer of operations managers and assistants who understand the needed operating rigor.

2. Operations management control of tenant and support groups who perform work in D&A facilities.

3. Insufficient numbers of trained operators and managers. Several key positions only have one person certified for that position.

4. Immature formal configuration control and site-wide document control.

5. Poor, non-existent, or inaccurate technical information (i.e., system drawings, design information, technical manuals, system descriptions, etc.).

6. Potential operating rigor regression when intense management oversight relaxes.

These problems are exacerbated by apparent weak LMES uppermost site management support to correct programmatic deficiencies. The problems will exist regardless of D&A restarting. D&A restart, with the proper operating rigor, will help drive programmatic corrections. As only a few operations have been performed since LMES made significant D&A operations organizational changes, close DOE Facility Representative assessment will be required as processes are started.

In conclusion, LMES is ready to restart D&A provided the current cadre of LMES operations managers and mentors, in conjunction with our planned strong DOE Facility Representative oversight, remains functionally intact until the programmatic improvements are implemented.

Michael R. Miller
Facility Representative

Steven E. Wellbaum
Facility Representative

United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: February 23, 1996

REPLY TO ATTN OF: DP-811:Christenson

SUBJECT: **RESTART OF DISASSEMBLY AND ASSEMBLY (D&A) ACTIVITIES AT THE Y-12 PLANT**

TO: J. C. Hall, Manager, Oak Ridge Operations Office, M-1, ORO
THRU: R. R. Nelson, Assistant Manager for Defense Programs, DP-80, ORO

Lockheed Martin Energy Systems, Inc. (LMES), stated in the attached readiness-to-proceed letter, F. P. Gustavson to R. J. Spence, subject, "Contract DE-AC05-840R21400, Report of Readiness to Proceed with Operation of the Disassembly and Assembly (D&A) Mission Area - Nuclear," dated February 23, 1996, (Attachment 1) that the D&A activities are ready to commence following the completion both of a DOE Readiness Assessment (RA) and of the closure of all pre-restart findings that were generated by the contractor's internal Management Self-Assessment (MSA), the LMES RA, and the Y-12 Site Office Restart Team (YSORT).

The YSORT was commissioned by me to evaluate and judge the effectiveness and adequacy of the D&A activities of the LMES restart process. The team performed an assessment in parallel to the LMES MSA and RA and identified the 102 findings; 55 of which were pre-restart findings. Six pre-restart issues remain open, which are identified in the above-mentioned readiness-to-proceed letter, and are scheduled to close prior to completion of the DOE RA. A copy of YSORT's final report, "Assessment of the Disassembly and Assembly Activities at the Y-12 Plant," (Attachment 2) that is signed by the team members and leaders is attached. The conclusion of the report is the contractor has completed or identified all the necessary actions to ensure the safe operation of the facility. The YSORT is confident that the D&A resumption area is ready to resume operations.

In addition to the efforts of the YSORT, all areas and activities that are being resumed, as part of the D&A, now have DOE facility representatives who follow a rigorous surveillance program. This surveillance program includes all disassembly, assembly, and material-testing activities in the facilities that are being restarted. Their reviews of scheduled special operations surveillances and daily oversight provide me assurance that the contractor facility personnel will operate the facility in a safe manner. A copy of the facility representatives' recommendation (Attachment 3) for D&A readiness to restart is attached.

The Y-12 Site Office (YSO) has also performed a self-assessment to determine our readiness for the DOE RA. The prerequisites identified in the DOE "Readiness Assessment Plan of Action for the Resumption of Disassembly/ Assembly Activities at the Oak Ridge Y-12 Plant," Rev. 1, dated January 8, 1996, have been evaluated; and the evidence, which shows that continuing assessment programs have been developed and initiated, has been compiled. A copy of the team leader's self-assessment summary (Attachment 4) is attached.

I recommend that you direct the DOE-ORO RA to commence on February 26, 1996. This recommendation is based on the YSORT's report, the recommendation of the facility representatives, the YSO self-assessment, and the readiness-to-proceed letter from the contractor.

Please contact either Tom Tison at 6-9854 or me at 6-0755 if you have any questions.

Robert J. Spence
Y-12 Site Manager

DP-811:Christenson

4 Attachments

cc w/attachments:
F. P. Gustavson, 9704-2, MS-8010, Y-12

United States Government

Department of Energy
Oak Ridge Operations Office

memorandum

DATE: February 23, 1996

REPLY TO ATTN OF: DP-811:Sundie

SUBJECT: **DOE SELF-ASSESSMENT FOR THE RESUMPTION OF DISASSEMBLY AND ASSEMBLY ACTIVITIES AT THE OAK RIDGE Y-12 PLANT**

TO: Robert J. Spence, Y-12 Site Manager, DP-81

The Y-12 Site Office (YSO) has performed a self-assessment for the resumption of Disassembly and Assembly (D&A) activities at the Oak Ridge Y-12 Plant. This assessment included a review of closures for findings identified during the Assessment of Federal Activities, Tasks 4 and 5, of the Defense Nuclear Facilities Safety Board (DNFSB) 94-4 Implementation Plan. All observations identified during these assessments were also addressed. Attached is a summary of this self-assessment.

The results indicate that all DOE Independent Readiness Assessment post-restart findings for Receipt, Storage, and Shipment that were levied against DOE Oak Ridge Operations have been closed. All prerequisites defined in the DOE Plan of Action for D&A have also been satisfied. Detailed evidence for this assessment is available in the Y-12 Site Office Restart Team evidence files located in the second floor conference room in Building 9119.

This assessment, including the corrective actions implemented by the YSO since September 22, 1994, shall serve as the basis for the line management declaration of the YSO readiness to perform oversight for resumption of D&A and all subsequent nuclear operation resumptions at the Y-12 Plant.

If you have any questions or need additional information, please contact Mark Sundie of my staff at 1-6441.

Thomas S. Tison
Restart Team Manager

Attachment

cc w/attachment:
D. E. Christenson, DP-811, ORO

SUMMARY REPORT
OF THE
DOE SELF-ASSESSMENT FOR DISASSEMBLY AND ASSEMBLY (D&A)

1.0 INTRODUCTION

Nuclear operations, including Disassembly and Assembly (D&A) activities, were suspended in September 1994, due to observed contractor failure to follow processes in support of safety. Operations personnel, upon discovery of a potential criticality safety violation, did not immediately execute required actions. Evaluation of Criticality Safety Approval (CSA) walkdowns, conclusions from the Type C Investigation, and the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-4 identified inadequate conduct of operations. The inadequacies included lack of rigor and formality as a significant contributing cause of the incident. The Y-12 Site Office (YSO) initially examined its role in the incident, developed of a problem analysis (dated September 27, 1994), and determined that the DOE oversight programs for criticality and conduct of operations were not rigorous enough to identify or anticipate the incident. The DOE developed a Plan of Action (POA) for resumption of Receipt, Storage, and Shipment (RSS) and more recently for D&A. These documents identify prerequisites to evaluate the adequacy of YSO personnel and oversight programs prior to resumption. The POAs includes criteria for evaluation of YSO readiness contained in Core Objectives (CO)-31 and CO-33 from DOE Order 5480.31, "Startup and Restart of Nuclear Facilities."

The YSO has completed a self-assessment which provides formal, detailed evidence that satisfies completion of prerequisites and all findings applicable to D&A prior to the beginning of the DOE RA. The details of this self-assessment are on file in the Y-12 Restart Team evidence files. This report provides a summary of the results from this self-assessment.

2.0 EXECUTIVE SUMMARY

The initial DOE self-assessment of September 27, 1994, served as the basis for succeeding plans and commitments for the DOE self-assessment. During the DOE self-assessment for RSS, shortcomings with staffing and the qualification program for facility representatives and YSO staff were identified. The need for additional technical oversight personnel included facility representatives, criticality safety personnel, and conduct of operations personnel. The need for an enhanced technical

interim, a list of deficiencies are provided on a periodic basis.

3.1.3 Occurrence Reporting Process System (ORPS)

All but one of the facility representatives have access to ORPS. An access password needs to be activated for this individual. This would provide him full access.

The facility representatives weekly meeting agenda was revised to include an action item list, performance indicators for ORPS, and performance indicators for the facility representative assessment program. The Environmental, Safety, and Health (ES&H) and Program Management Branch Chiefs and the Restart Team Leader were added to the weekly meeting notification to encourage participation.

3.2 YSO Qualifications

In response to previous RSS DOE RA observations, and to enhance the technical qualifications of its staff, the YSO has prepared assessment guidelines for the following:

"Conduct of Operations Assessment Plan"
"Radiological Protection Assessment Plan"
"Nuclear Safety Assessment Plan"
"Management Systems Assessment Plan"
"Quality Assurance Assessment Plan"
"Occupational Safety and Health Assessment Plan"
"Configuration Management Assessment Plan"
"Conduct of Maintenance Assessment Plan"

These guidelines currently comprise the "YSO Assessment Manual." A future format and distribution of these documents is has not been determined. Once these guidelines are approved, they may be formatted into a DOE Standard for distribution. However, they may also be distributed as reference information to aid in the YSO assessment process. YSO personnel have been trained in conducting assessments. YSO technical staff qualifications were reviewed and verified to be current with the existing Implementation Plan for DNFSB Recommendation 93-3. Full implementation of technical staff training is scheduled for April 1998.

3.3 Lessons Learned

RSS findings will be reevaluated for lessons learned and generic implications. Corrective and preventative actions will be initiated and completed.

In the DOE Assessment Plan for D&A, a line of inquiry was added to each CO. It states that the corrective actions for prior Lockheed Martin Energy Systems, Inc. (LMES) and DOE findings germane to this CO are adequately implemented and are effective in correcting the previously identified condition and preventing its recurrence. Therefore, the last line of inquiry for for each CO addresses lessons learns and generic implications by reviewing corrective actions of previous findings and determining whether or not the deficiency has been permanently resolved.

3.4 Deficiency Tracking System (DTS)

DTS has been established since the restart of RSS. It is currently in use and problems have been documented and corrected. Improvements will be incorporated on a continual basis.

3.5 Special Operation Requests

Open post-operation findings from Special Operation Requests were reviewed for applicability and impact to D&A resumption. No D&A related issues were found.

4.0 Disassembly and Assembly DOE Self-Assessment Review and Verification Activities

See attached matrix.

DOE Self Assessm or D and A Resumption

Source of Issue	Issue Number	Description	Finding	Observation	Assignment	Issue Resolved?	Discussion/Notes
DOE IRA Issues from RSS Assessment	OR 1-1	The Y-12 Site Office Facility Representative Qualification Guide does not contain facility-specific (Phase 2) qualification requirements.	x		Miller/Wall	Yes	Full qualifications will be accomplished per an approved (1/26/96) new schedule. This schedule shows all 3 Qualification Standard Cards as complete on 3/96. All Fac. Reps. to be fully qual 7/96. Fac. Reps. are currently interim qualified.
	OR 2-1	Facility Representatives do not have real-time access to the YSO Deficiency Tracking System from their offices.		x	Miller	Yes	Real time access to the YSO DTS will be complete after installation of an Ethernet line. Currently a list of deficiencies are provided on a periodic basis.
	OR 2-2	The Deficiency and Request for Approval Tracking System (DTS), Performance Indicators, and DOE Y-12 Office Monthly Report to the contractor are not mature.		x	McCarten	Yes	A DTS has been established, is operating, was studied for improvements, and is being revised.
	OR 2-3	The Y-12 Site Office has not reviewed closure of the LMES Readiness Assessment Pre-Start findings.	x		Sundie	Yes	LMES RA findings have been reviewed for closure as a part of CO-30 Line Item 30.4 in the DOE Assessment Plan. Results are documented in the YSORT Final Report for D&A.
	OR 2-4	Assessment guides for perfomance of Conduct of Operations, Radiological Protection, and Criticality Safety are informal and have not been revewed/approved by management.		x	Hoag	Yes	Assessment guide lines have been prepared and issued. In addition other assessment guidelines have also been prepared. YSO staff has been trained.
	OR 2-5	Two Facility Representatives from Environmental Management who operate in Waste Management facilities at the Y-12 Site do not report to the Y-12 Site Office Manager.	x		Nelson/Wall	Yes	This was resolved during RSS. The RSS evaluation applies to D&A also.
	OR 2-6	The documentation of the formal self-assessment program at the Oak Ridge Operations Office is not capturing major changes being made in the program.	x		ORO Larkin/Hoag	Yes	Due to reorganization in ORO, ORIGS remain in revision but should be completed by July 1996.
	OR 2-7	There is currently no formal program for the orderly transfer of deficiencies and issues from the YSORT into the tracking, and routine oversight activities for the YSO.		x	Hoag	Yes	Pre-restart findings resolved thru ESAMS. Post-restart findings loaded into DTS and ESAMS, and resolved. No formal procedure exists. Findings are handled this way because they are fast track in nature and experience indicates success with this process.
	OR 3-2	Federal programmatic noncompliance exists concerning DOE Order 5480.23. Nuclear Safety Analysis Reports, without an approved Compliance Schedule Agreement or Exemption.	x		Hoag	Yes	This item was resolved for RSS. RFA-CSAs were prepared.
	OR 3-3	The schedule for the Safety Analysis Report Upgrade Program (SARUP) developed to address SAR and OSR/TSR noncompliance with DOE Orders 5480.22 and 5480.23 has not been approved by DOE.	x		Hoag	Yes	The SARUP is to be DOE approved by ORO in late March 1996.
DOE HQ Task 4 Assessment	F-COO-1.1-2	DOE approved matrices of applicability for implementation of DOE 5480.19 do not exist for Y-12 facilities	x		Christenson	Yes	Applicability matrices were developed by LMES and have been approved by DOE for acceptability.
	F-COO-1.2-3	Evaluate need for improved structure to weekly FR meeting.		x	Miller	Yes	FR weekly meeting agenda now includes action items list, and performance indicators for ORPS and the FR Assmnt Program. ES&H and Program Branch Chiefs and the Restart Team Leader were added to the FR weekly meeting notification e-mail list.
	F-COO-1.3-8	YSORT validation and documentation of approval of DOE RSS RA corrective action plans and findings closure packages were not performed in accordance with YSO 5.4.1 and did not require lessons learned/generic implications as required by YSO 5.4.1.	x		Sundie	Yes	Root Cause Analysis was performed. It addressed: adequacy of procedures, lessons learned, and management. A YSORT post finding identifies on-compliance to LMES proc on this issue. This is discussed in the YSORT Final Report for D&A.
	F-COO-3.2-1	Facility Representatives are responsible under DOE O 232.1, Occurrence Reporting and Processing of Operations Information to look for trends and lessons learned information from the occurrence	x		Miller/Wall	Yes	As of 2/22/96, ORPS in place and accessable to all FRs.

Source of Issue	Issue Number	Description	Finding	Observation	Assignment	Issue Resolved?	Discussion/Notes
		reporting system. Many of the Y-12 facility representatives are hindered in performing this function due to a lack of convenient access to the ORPS System.					
	F-COO-3.2-2	Roll-up occurrence reports are not in accordance with requirements, and current information is not maintained in the ORPS System.	x		Jackson	Yes	LMES will revise Y60-161 to include all categorization criteria included in Order 232.1 YSO and DPI Office will approve. An approved deviation allows Y-12 to categorize and report under 232.1 even though contractually they are under 5000.3B.
DOEHQ Task 8 Assessment	1	Review recommendations from Task 8 assessment for applicability to D&A resumption.			Livesay	Yes	No commitments applicable to D&A.
Prerequisites from the DOE D&A Plan of Action	1	LMES has completed their Readiness Assessment and all prestart findings have been resolved, and the ready-to-proceed memorandum has been transmitted to DOE.			Tison	Yes	After closure of pre-restart findings, LMES is required to transmit to DOE an RTP letter. Confirmation of this letter is a part of CO-30 and is discussed in the YSORT D&A Final Report.
	2	YSO has completed a Validation Review of the contractor management self-assessment and RA, and the LMES Readiness-to-Proceed Memorandum has been endorsed by YSO and transmitted to the Restart Authority.			Christenson	Yes	A validation review of LMES MSA & RA is performed as part of CO-30. This has been completed and is documented in the YSORT D&A Final Report. The RTP Memo has been endorsed by YSO and transmitted to the the restart authority.
	3	YSO facility representatives are assigned and qualified in accordance with locally developed interim qualification standards. Long-term plans are being developed for eventual qualification in accordance with DOE Standard (DOE-STD-1063-93), Establishing and Maintaining a Facility Representative Program at DOE Nuclear Facilities, dated August 1993. If the facility representative has not completed the interim qualifications, a mentor is assigned as a compensatory measure. The facility representative mentoring requirements are defined and adequate to satisfy as a compensatory measure.			Wall/Miller	Yes	All Facility Representatives (FRs) have completed interim qualifications and are interim qualified for 18 months. The first re-interim qual is due 12/96. Full qualifications are projected to be completed by 5/96.
	4	The use of mentors, as compensatory measures for Conduct of Operations requirements, is documented. Qualifications, experience, and responsibilities for mentors have been established, mentors have been selected, and mentors have been assigned to specific tasks. Performance objectives have been established that define the minimum performance of YSO personnel prior to mentor removal.			Hoag	Yes	No Mentors for conduct of operations are required. Oversight of conduct of operations will be accomplished by Fac Reps, YSO Restart Team Leaders, and the YSO Restart Team.
	5	Documentation of compensatory measures is complete. YSO personnel understand the compensatory measures and when they are required. The conditions for the removal of compensatory measures are documented and understood by YSO supervisors. A program for the periodic management assessment of the continued need and adequacy of compensatory measures is in place and implemented.			Hoag/Carpenter	Yes	Documentation of compensatory measures is complete. A program to periodically review all compensatory measures has been addressed in the guideline 'Compliance Management Compensatory Measures Assessment Plan' located in the YSO Assessment Manual.
	6	YSO management self-assessment (MSA) has been completed and verifies readiness of YSO to oversee the resumed facility operations. The MSA has verified:			Sundie	Yes	This document completes this activity.

DOE Self Assessm r D and A Resumption

Source of Issue	Issue Number	Description	Finding	Observation	Assignment	Issue Resolved?	Discussion/Notes
Prerequisites from the DOE D&A Plan of Action (continued)	6.a	The post-operation findings from applicable special operation requests that have been determined to be prestart findings have been closed.			Christenson/Sundie	Yes	Post Operational findings for SORs have been reviewed for applicability to D&A. This review was done by LMES as a corrective action to resolve pre-restart findings from YSORT on CO-25 from the LMES D&A POA.
	6.b	The restart actions planned in response to DNFSB Recommendation 94-4 have been reviewed for pre-resumption items and any identified actions completed.			Sundie	Yes	The 94-4 Corrective Action Plan was reviewed. It does not contain issues applicable to D&A.
	6.c	The Phase II items identified as restart issued in the document, Y-12 Site Office Plan for Line Assessment of Resumption of Activities and Programmatic Improvements at the Y-12 Plant, have been dispositioned and required prestart actions completed.			Hoag	Yes	These issues have been addressed, documented, and are discussed below.
	c.1	Provide guidance in the developmenta of the LMES Plan for Continuing and Resuming Operations			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.2	Prepare the DOE line assessment plan, including lines of inquiry and instruction, for review of LMES actions for Continuing and Resuming Operations			Hoag	Yes	The D&A Assessment Plan was prepared and issued October 19, 1995.
	c.3	Prepare the YSO Readiness Assessment (RA) Plan of Action for transmittal to the ORO AMESQ for use in developing the RA Implementation Plan.			Hoag	Yes	The DOE YSO POA was prepared and issued June 7, 1995.
	c.4	Review and walk-down a sample of continuing operations to verify satisfactory completion of the corrective actions (i.e., Group I, concentrating on essential operations involving CSAs).			Hoag	Yes	The Configuration Management Control System, based on 5480.24 requires reliance on equipment spacing design. This is not being done. Equip. labeling is inadequate. Operator aid posting is inadequate. During walkdowns most CSAs were found to be inaccurate.
	c.5	Review Requests for Special Operations (involving nuclear activities). For Non-nuclear Requests for Special Operations and Non-nuclear Operations Resumption Requests, YSORT validates the contractor's determination that the special activity is non nuclear documents this in a log, and then assigns these requests to the YSO ES&H Branch for review/assessment. YSORT will continue to review Requests for Special Operations for Nuclear Operations until the YSO Readiness Review Group assumes this responsibility.			Hoag	Yes	Review of requests for special operations requests (SORs). See 6.c.12.
	c.6	Upon approval and initiation of the Readiness Review Group, bring all reviews and walkdowns being performed to a conclusion and issue status reports.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.7	YSORT review and comment on AMESQ draft Readiness Assessment procedure and Implementation Plan documents.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.8	Determine the need to reprogram funding in FY-95 to support both LMES and DOE corrective actions.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.

DOE Self Assessme[illegible]r D and A Resumption

Source of Issue	Issue Number	Description	Finding	Observation	Assignment	Issue Resolved?	Discussion/Notes
Prerequisites from the DOE D&A Plan of Action (continued)	c.9	Review Y-12 and ORO actions for DNFSB Recommendation 93-6 and determine if additional actions are required.			Wall/Carpenter	Yes	Recommendation 93-6 was reviewed and no actions were determined to be applicable to D&A.
	c.10	Assume responsibility for the continuing assessment of commitments in the LMES Resumption Plan related to the safety of boht nuclear and non-nuclear operations. Also, assume review responsibility for all Requests for Special Operations involving non-nuclear operations. Submit recommendation for concurrence of requests to the Y-12 Site Manager.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.11	Assume responsibility for the continuing assessment of commitments in the LMES resumption plan related to conduct of operations improvements.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.12	Initiate the YSO Restart Team (YSORT) headed by a lead DOE Restart Manager to perform reviews for all Requests for Special Operations (nuclear). Submit recommendation for concurrence for requests to the Y-12 Site Manager. Also, YSORT will review all Requests for Special Operations (including non-nuclear) to validate the LMES determination that the facility/activity is non-nuclear. A log of this validation will be maintained by YSORT. If YSORT agrees with the determination then it will be assigned to the YSO ES&H Branch for line assessment for safety of non-nuclear activities.			Hoag	Yes	YSORT reviews, tracks, and logs SORs for nuclear and some non-nuclear activities. For SORs reviewed by YSO, logs of SORs and tracking of SORs are documented in various locations.
	c.13	Review the LMES operations mentoring program and issue a summary evaluation report.			Hoag/Christenson	Yes	This activity was completed during DOE assessment of 5480.19, Core Objective 19 for D&A.
	c.14	Contract additional support services personnel with commercial nuclear and/or Naval nuclear experience to assist in monitoring and assessing LMES corrective action implementation.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.15	Review the status of LMES corrective actions related to the resumption plan in bi-weekly meetings. Review LMES Requests for Action (RFA) in accordance with YSO procedure. Coordinate independent review of RFAs by AMESQ staff.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.16	Prepare a plan to reviw and walkdown all resumption requests for nuclear operations to verify satisfactory completion of the resumption requirements (Groups III and IV from Y/AD-623)			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	7	All Requests for Approvals (Compliance Schedule Approvals) required for the facility restart have been approved.			Hoag	Yes	All RFAs have been approved as documented for CO-27. Refer to the YSORT Final Report for D&A.
YSO Monthly Reports	1	Review and evaluate deficiencies and issues contained in YSO Monthly Reports for D&A significance. Determine if the issues are D&A pre-start.			Hoag, Carpenter, Sundle & Miller	Yes	Fac Reps - Inadequate OSR implmentation and proc doc control. Comp measures are in place for D&A restart. Prog Mgnt & ES&A - None applicable. YSORT - Documents to produce & control procedures is a site level issue & not within the D&A resumption scope.

DOE F 1325.8
(4/93)

96/1570

United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: February 23, 1996

REPLY TO ATTN OF: DP-811:Christenson

SUBJECT: **RESTART OF THE DISASSEMBLY AND ASSEMBLY (D&A) ACTIVITIES AT THE Y-12 PLANT**

TO: Robert J. Spence, Y-12 Site Manager, DP-81, ORO

The Lockheed Martin Marietta Energy Systems, Inc., (LMES) letter "Contract DE-AC05-840R21400, Report of Readiness to Proceed with Operation of the Disassembly and Assembly (D&A) Mission Area - Nuclear," dated February 23, 1996, stated that the D&A activities are ready to resume operations. The Y-12 Site Office Restart Team (YSORT) has completed its review of the subject resumption area and the LMES state of readiness. This review resulted in 102 findings that were transmitted to LMES. YSORT has verified the closure of all pre-restart findings from the YSORT and the LMES Readiness Assessment (RA) reviews with the exception of the six pre-restart issues which remain open. These open pre-restart issues have approved corrective actions plans (CAPs) with closure scheduled to be completed by March 1, 1996. All post-restart findings either have approved CAPs validated by YSORT or have been verified as closed by YSORT.

YSORT has documented its oversight and assessment of the LMES state of readiness to resume operations in the D&A resumption area. A copy of DOE "Y-12 Site Office Restart Team Assessment of the Disassembly and Assembly Resumption Activities at the Y-12 Plant," that is signed by team members and approved by the team management is attached. This report concludes that the contractor has completed or identified all necessary actions to ensure safe operation of the facilities. YSORT is confident that the D&A resumption area is ready to resume operations.

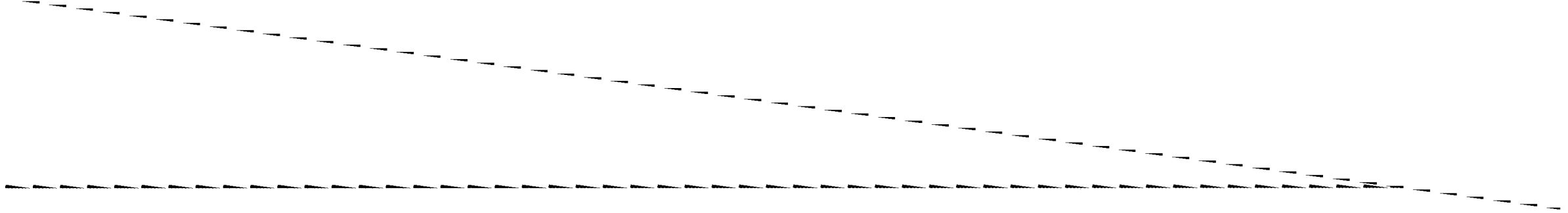
We recommend that you request the DOE Oak Ridge Operations Office to commence with the DOE RA in accordance with DOE Order 5480.31, "Startup and Restart of Nuclear Facilities."

If you have questions or need additional information, contact Dale Christenson at 4-3964 or me at 6-9854.

Thomas S. Tison
Restart Team Manager

Attachment

cc w/attachment:
D. K. Hoag, DP-813, ORO
M. A. Livesay, DP-812, ORO
D. L. Wall, DP-81, ORO



ATTACHMENT 2

UNCLASSIFIED

U. S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

Y-12 SITE OFFICE RESTART TEAM

ASSESSMENT OF THE DISASSEMBLY AND ASSEMBLY ACTIVITIES AT THE Y-12 PLANT

February 23, 1996

UNCLASSIFIED

DERIVATIVE CLASSIFIER Y-12 RESTART TEAM LEADER
(NAME AND TITLE)

UNCLASSIFIED

U. S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

Y-12 SITE OFFICE RESTART TEAM

ASSESSMENT OF THE DISASSEMBLY AND ASSEMBLY ACTIVITIES AT THE Y-12 PLANT

February 23, 1996

****

Submitted By: Dale E. Christenson **Date:** 2/23/96
Dale E. Christenson, Team Leader

Submitted By: Mark A. Sundie **Date:** 2/23/96
Mark A. Sundie, Team Leader

Approved By: Thomas S. Tison **Date:** 2/23/96
Thomas S. Tison, Restart Team Manager

UNCLASSIFIED

ASSESSMENT OF THE
DISASSEMBLY AND ASSEMBLY ACTIVITIES
AT THE Y-12 PLANT

Y-12 Site Office Restart Team

Thomas S. Tison
Restart Manager

Dale E. Christenson
Team Leader (Lead)

Mark A. Sundie
Team Leader

Frank S. Poppell
Resumption Area Lead

Gerald R. Mountain
Procedures (Lead)

Gary F. Weston
Operations (Lead)

Charles H. Robinson
Procedures and
Safety Envelope

Randy C. Foust
Management (Lead)

Kirk W. Van Dyne
Safety Envelope (Lead)

Peter R. Kulesza
Management

Thomas Rogers
Training and Qualification/
Level of Knowledge

George Napuda
Startup Test and
Assessments (Lead)

ASSESSMENT OF THE
DISASSEMBLY AND ASSEMBLY ACTIVITIES
AT THE Y-12 PLANT

Y-12 Site Office Restart Team

Dennis O. Myers
Operations

Richard L. Renne
Management

Wayne L. Britz
Startup Test and Assessments

Donald A. Beckman
Technical Editor

Mike C. Klanecky
Operations

Kimberly E. Hurd
Administrative Support
(Lead)

Kay F. Dutton
Administrative Support

Nicola P. White
Administrative Support

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Y-12 Site Office Restart Team (YSORT) conducted a review to verify the ability of Lockheed Martin Energy Systems, Inc., (LMES) to conduct a safe resumption of Disassembly and Assembly (D&A) activities, in accordance with DOE Order 5480.31, *Startup and Restart of Nuclear Facilities*, requirements following the stand-down of Y-12 facilities on September 22, 1994. This review was conducted to satisfy the DOE line management responsibility for the verification of the contractor's readiness to resume and to provide a recommendation to the approval authority to proceed with the DOE Readiness Assessment (RA) The YSORT review of LMES D&A mission area activities was conducted from November 1995 to February 1996.

The YSORT consisted of 20 members with diverse nuclear backgrounds. The YSORT activities were full-time, dedicated efforts in planning and executing Y-12 Site Office (YSO) oversight of resumption activities at Y-12.

The YSORT review was performed in accordance with *Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly*, dated October 19, 1995, that was scoped to be consistent with the Lockheed Martin Energy Systems, Inc., Document Y/OA-6238, *Readiness Assessment Plan of Action (POA) for the Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant*, DOE Order 5480.31, and with items required for resumption as identified by LMES. The YSORT review was performed using the Core Objectives (CO) described and scoped in the Document Y/OA-6238. The review was organized into six functional areas which included Management, Operations, Procedures and Programs, Safety Envelope, Training and Qualification/Level of Knowledge, and Startup Test and Assessments. Part of the YSORT review included assessments of LMES implementation of DOE Order 5480.31 requirements in the performance of their Management Self-Assessment (MSA) and the LMES RA.

The YSORT's review generated 102 findings. Fifty-five of these findings were designated by YSORT as pre-restart and 47 findings were designated as post-restart. LMES had closed all pre-restart findings that were generated by YSORT with the exception of three findings at the time of this report. These remaining pre-restart findings have YSORT-approved corrective action plans (CAPs) with closures scheduled to be completed by March 1, 1996. The post-restart findings are either closed or have YSORT-approved CAPs.

The LMES MSA and RA were satisfactorily completed and verified the readiness of the D&A activities. Three additional pre-restart issues remains open from the LMES RA. The remaining pre-restart issues have approved CAPs with closures scheduled to be completed by March 1, 1996. YSORT has verified the

closure of all closed pre-restart LMES RA findings. LMES submitted a letter entitled "Contract DE-AC05-84OR21400, Report of Readiness to Proceed with Operation of the Disassembly and Assembly (D&A) Mission Area - Nuclear," dated February 23, 1996, to DOE management that certified their readiness to resume D&A Operations and documented an acceptable status for all open items.

The overall YSORT conclusion was that D&A facilities, programs, and personnel are ready to safely resume normal operations. This conclusion is contingent upon the adequate closure of the remaining open pre-restart findings. LMES has made significant improvements in how they conduct work activities since the September 1994 stand-down. Continuous improvements are expected as LMES addresses corrective actions for post-restart programmatic findings.

U.S. Department of Energy
Oak Ridge Operations
Y-12 Site Office Restart Team
Assessment of the Disassembly and Assembly Activities at the Y-12 Plant

1.0 INTRODUCTION

The United States Department of Energy (DOE) formalized a system to standardize and control the process of facility startups as outlined and administered by DOE Order 5480.31. As part of this process, the DOE line management must validate the contractor's state of readiness and then must provide a recommendation to proceed with the DOE RA. The overall framework to restart facilities at the Y-12 Plant is included in Y/AD-623, *Plan for Continuing and Resuming Operations, Oak Ridge Y-12 Plant*, that was concurred on by the Assistant Secretary for Defense Programs. To meet the intent of the DOE Order 5480.31 requirements, the DOE YSO organized and tasked a YSORT of subject matter experts (SMEs) to evaluate LMES readiness to resume D&A activities. YSORT biographical information is provided in Appendix 7.1.

The results of the YSORT assessment of D&A and the recommendations to the Y-12 Site Manager are documented in this report.

2.0 SCOPE

The YSORT assessment, which was conducted in accordance with *Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly Activities Resumption*, evaluated the adequacy of the actions taken by LMES to prepare D&A for restart in six functional areas. These functional areas (Management, Operations, Procedures and Programs, Safety Envelope, Training and Qualification/Level of Knowledge, and Startup Test and Assessments) were assessed, and the results were documented in accordance with YSO Operating Procedure YSO-5.4.1, *Restart Team Assessments*.

3.0 REFERENCES

A complete list of references is identified in Appendix 7.4.

4.0 FUNCTIONAL AREA REPORTS

4.1 Management

YSORT evaluated the assessment activities for the Management Functional Area (defined by the YSORT Assessment Plan for Disassembly and Assembly Operations) by a combination of interviews, document reviews, observation and review of the LMES MSA, and observation and review of the LMES RA.

4.1.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Management Functional Area using the following COs:

CO-20 requires confirmation that personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements, and that through their actions, demonstrate a high priority to comply with these requirements.

CO-24 involved a determination whether functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety.

CO-25 determined whether a process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor.

CO-27 required a review to determine if nonconformances to applicable DOE Orders have been identified and if schedules for gaining compliance have been justified in writing and formally approved.

CO-29 required an assessment to determine if a program was established to promote a site-wide safety culture.

4.1.2 Conditions of Contractor Programs and Procedures

4.1.2.1 Core Objective 20

An assessment was performed by conducting interviews and evidence file reviews to determine if personnel exhibit an awareness of

public and worker safety, health, and environmental protection requirements and if through their actions, demonstrate a high priority to comply with these requirements. The assessment also included a review of radiological practices in Buildings 9204-2 and 9204-2E. This review included internal and external dosimetry, facility contamination, boundary control, radiological instrument calibration and radiation work permits (RWPs).

Interviews of D&A resumption personnel and a review of procedures indicated that concern for safety was evident within plant policies, procedures, and employee practices. All employees and management personnel that were interviewed demonstrated an understanding of safety practices in their daily operations and the importance of safety in the performance of duties at Y-12 Plant. They also demonstrated adequate understanding of their rights and duty to raise safety concerns to their management and that they were empowered to stop a job at any time to get resolution of a safety issue.

The review of radiological control practices within Buildings 9204-2 and 9204-2E indicates that calibration of radiological instruments to support D&A was adequate with no deficiencies identified. Also, the development and use of radiological work permits were evaluated and determined to be adequate. A YSORT concern was identified that involved LMES' efforts to suspend radiological procedures. The cancellation of formal RadCon procedures was not conducted in accordance with LMES Procedure Y10-102, *Operating Procedures Development, Revision, and Control.* In addition, a formal technical qualification program was not in place prior to cancellation of the procedure. This deficiency was identified as a post-restart issue.

Further details of the CO assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3007, 3016, 3025, 3032, 3033, 3038, 3043, 3044, 3056 and 3097. Two post-restart findings were identified during the course of this assessment.

4.1.2.2 Core Objective 24

An assessment was performed to determine if the functions, assignments, responsibilities, and reporting relationships were clearly defined in LMES-approved documents and are adequately implemented throughout D&A Operations.

The assessment was performed by interviews and documentation reviews to determine if the resumption activities defined by CO-24 were performed and effectively implemented. Interviews were performed to gather information on the knowledge and awareness of the D&A Operations personnel on their roles and responsibilities. The assessment was performed to take into consideration the activities performed by the support organizations as defined by Request for Approval (RFA) MMES/Y-12-DOE-5480.19-CSA-160B, *Conduct of Operation Implementation Deficiencies*.

The review demonstrated that the roles and responsibilities are defined, understood, and effectively implemented. Two post-restart findings were identified during the course of this review. These issues focus both on requiring Nuclear Operations to provide organizational information (as described by the Lockheed Marietta Energy Systems, Inc., *Nuclear Operations Conduct of Operations Manual*) to support organizations and on providing briefings or training to support organizations to reinforce their knowledge and awareness of interorganizational agreements on implementation of the Nuclear Operations Conduct of Operations Manual. These issues are not considered safety-significant and outside the pre-restart scope of the Document Y/OA-6238.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3003, 3023, and 3024.

4.1.2.3 Core Objective 25

A review was performed on the process employed by LMES to determine the adequacy of corrective actions taken to resolve deficiencies identified from internal and external assessments conducted since October 1993. Also included was a review of the deficiencies from previous restarts, which were classified as post-restart, to determine their acceptability to remain open after D&A resumption.

Lists of internal and external assessments conducted since October 1993 were compiled and placed in the evidence file. The deficiencies, along with their corresponding corrective actions, were reviewed by the respective organizations management to determine if the corrective action taken was adequate, and were evaluated for pre/post-restart significance. Numerous findings

were identified from this review relating to documentation deficiencies that were identified from the evidence file review. The contractor's issues management program and procedures continue to undergo revision and upgrades. The appointment of an issues manager and the intended revision to procedures are moving the contractor in a positive direction. Procedural improvements are in progress to place time limits on resubmittal of rejected deficiencies, to incorporate generic implication analysis, and to revise deficiency management-related procedures. The condition of contractor programs and procedures addressing issues and deficiency management is, therefore, in a state of continuous improvement but is adequate for restart.

Results from this review indicate that the LMES evaluation process lacked attention to detail with respect to 1) issues that were included in the scope and 2) the preparation of the evidence packages. In addition, LMES failed to evaluate deficiencies for generic implication as required by site procedures. As a result, 13 pre-restart findings and 1 post-restart finding were identified during the course of this assessment. LMES has taken adequate actions necessary to resolve and close the pre-restart findings. As such, the criteria associated with CO-25 have been satisfied to a level necessary to support the resumption of D&A.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3004, 3005, 3037, and 3072.

4.1.2.4 Core Objective 27

An assessment was performed to verify that baseline compliance reviews have been conducted on the 51 DOE Orders of Interest to the Defense Nuclear Facilities Safety Board (DNFSB) that are applicable to D&A and that non-compliances are addressed in DOE-approved RFAs or exemptions. The assessment was performed by reviewing D&A evidence files, documentation, correspondence, and by conducting interviews. The assessment also included a review to verify that compensatory measures, actions, and schedule commitments have been implemented and are effective.

Baseline compliance reviews have been conducted for the 51 DOE Orders of Interest to the DNFSB, and all non-compliances applicable to D&A are addressed in DOE-approved RFAs. Three D&A-applicable RFAs, which were previously approved, are currently

undergoing a revision. Revisions of RFA CSA-2B, RFA CSA-40C, and RFA CSA-47B are in the review and approval process. The RFA process is an ongoing living process. As resumption efforts continue and as assessments are performed, order non-compliances will be identified, documented, approved, and tracked to closure by existing systems. Currently, these systems are being enhanced by DOE-ORO, DOE YSO, and LMES compliance personnel who stay in constant communication.

The assessment of CO-27 yielded two post-restart findings. The findings involve unreasonable resubmission schedules for rejected RFAs and request for closures (RFCs) and the lack of evidence to verify implementation of compensatory measures. Efforts have been made by the contractor to close both of these findings. Inadequate procedures contributed to the lack of punctual resubmittal of rejected RFAs and RFCs. As this generic cause was recognized by the contractor, the CAP for this finding includes a revision to associated procedures. The findings are post-restart, and corrective actions by the contractor are in progress.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3027, 3028, and 3029.

4.1.2.5 Core Objective-29

The D&A facilities have instituted an effective safety culture for employees in accordance with Y-12 Plant policies and procedures. The safety culture has been integrated into policies, procedures, daily briefings, and pre-job evolutions processes. Documentation and personnel interviews indicate that there has been a comprehensive approach to establishing safety as a cultural entity at Y-12 Plant. Additionally, an acceptable Employee Concerns Program at Y-12 Plant is implemented by Procedures Y70-027, *Safety, Health, and Environmental Suggestions, and Complaints*; Y60-164, *Lessons Learned*; and Y10-111, *Required Reading*.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3017, 3019, 3020, 3041, 3057, and 3097. No findings were identified during the course of this assessment.

4.1.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Management Functional Area are summarized in Appendix 7.2. The specific findings and the contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- Lack of evidence to show that the deficiency identified from LMES MSA on Receipt, Storage, and Shipment (RSS)(Finding MG-07) was not repeated on D&A;
- Findings generated from prior DOE and LMES assessments were not evaluated for D&A impact and applicability;
- Evidence files for CO-25 do not contain findings or deficiencies that were identified after May 2, 1995;
- LMES conclusion that post-restart RSS findings are also post-restart for D&A;
- Numerous pre-restart findings identifying deficiencies with the process formulated by LMES to complete CO-25 activity;
- Follow-up action to address deficiencies which were determined to have unsatisfactory corrective action during the CO-25 review; and
- Failure to perform generic applicability review as required by LMES Procedure QA-16.1, *Corrective Action Program.*

In total, 12 pre-restart findings and 8 post-restart findings were identified. LMES has taken sufficient action to close the pre-restart deficiencies.

4.1.4 Significant YSORT Restart Issues

Except as discussed below, no significant restart issues were identified during the performance of this review. Those findings classified as pre-restart either have been closed or resolved for the purpose of D&A resumption.

Contractor performance in the evaluation of deficiencies for generic applicability and causal evaluation are still a concern and weakness. Findings have been written to require LMES to formally address these issues for D&A resumption. Programmatically, LMES has developed a CAP to address these issues as part of an overall programmatic improvement initiative.

4.1.5 Conclusion

Based on the results of the assessment activities associated with COs-20, -24, -25, -27, and -29, the activities performed by LMES are determined to be adequate in meeting the requirements defined by the assessment criteria, noting that the pre-restart deficiencies identified in the assessment reports have been resolved and closed. All activities required by the Document Y/OA-6238 have been completed to a level necessary to support resumption of D&A Operations.

4.2 Operations

The YSORT evaluated Conduct of Operations implementation to determine the readiness to resume D&A activities. This evaluation included the review of programs and procedures; observation of field activities, including Quality Evaluation (QE) Special Operations evolutions; the performance of the LMES personnel during the MSA and RA; and the actions taken by LMES to correct YSORT and other findings.

4.2.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Operations Functional Area using the following COs:

CO-19 required implementation of the following chapters of DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities.*

I	*Organization and Administration*
II	*Shift Routines and Operating Practices*
V	*Control of On-the-Job Training*
VI	*Investigation of Abnormal Events*
VIII	*Control of Equipment and System Status*
XIV	*Required Reading*

XV	*Timely Orders to Operators*
XVI	*Operating Procedures*
XVII	*Operator Aids*

An assessment of mentor program activities for D&A was also performed as part of CO-19 activities.

CO-22 was used as a basis for evaluation of the LMES operational drill program, including management's involvement and support; adequacy of drill procedures scenarios, guides, and records; and the effectiveness of observed drills.

4.2.2 Conditions of Contractor Programs and Procedures

LMES had begun the development and implementation activities of the Conduct of Operations Program before the 1994 stand-down, but had been unsuccessful in achieving the necessary changes in plant programs to effectively change the culture. Comprehensive implementation plans for conduct of operations were not available until May 1995. As a result, the LMES Conduct of Operations Program was not fully developed and was inconsistently implemented across the Y-12 Plant organizational units. The program has since progressed to a level where the basic program elements have been implemented.

DOE identified a weakness in D&A operations supervision to recognize and respond to issues and deficiencies confronted during the dry runs required by the MSA for demonstration activities. Additional management guidance, training of line supervision, and demonstration of operational response to upset conditions were required in order to correct this problem area. YSORT has reviewed these actions and has observed improvements on the performance of D&A supervision. Formal observation training for D&A supervision will also be required as a post-restart action to further develop the supervisors ability to recognize issues and deficiencies.

The contractor had not fully implemented the Conduct of Operations program in the area of equipment control and system status, notably with safety system configuration. The condition of the existing configuration drawings for both the Criticality Accident Alarm System (CAAS) and Fire Protection System did not allow

effective implementation of operations requirements. The drawings were deficient in both reflecting the latest "as-built" of the systems as well as not being effectively controlled to ensure that operations had the current engineering issue of the drawing. An intensive program was initiated to walkdown, update and control the issuance of these required drawings. The updates of the electrical drawings for the Criticality Accident Alarm and mechanical drawings for Fire Protection Systems had not been completed at the time of this report, but will be completed prior to restart. The "as-built" electrical drawings for fire protection will be completed post-restart. Compensatory measures, as defined by LMES, will require additional Shift Technical Advisor (STA) review for all changes which affect system status and involve these electrical drawings. YSORT has reviewed the completed actions for these drawing updates inclusive of the compensatory actions for the STA review and the new drawing control program. Based on this assessment, YSORT considers the actions taken as acceptable for interim compliance to the configuration requirements defined by Chapter VIII of the Nuclear Conduct of Operations Manual.

The contractor had not fully implemented the Conduct of Operations Program in organizations which provide support to the Disassembly and Storage Organization (DSO), primarily with the Quality Organization (QO). This facility tenant organization performs radiography, dimensional inspection, ultrasonics, and material testing as an integral part of the assembly and disassembly operations. The level of program development and implementation for the QO was at a lower level of implementation than would be required to support restart of the mission area. Findings were issued in QO conduct of operations training, procedures, standing orders (SO), operator aids, compensatory measures, and self-assessments areas.

YSORT had initially found that the documentation of the QO Conduct of Operations Program neither adequately defined the program nor its implementation to the requirements of RFA-160B. LMES has initiated additional program development efforts to provide management and floor operation mentors to this area. Five additional mentors have been assigned to this organization to provide the interim corrective actions for restart.

Other conduct of operations deficiencies were initially identified in interface between operations and the support organizations, specifically, with Fire Department Operations, RadCon, Plant Shift Superintendents (PSS) Office, and the Nuclear Criticality Safety Department (NCSD). Specific implementation problems were found in selected support organizations implementation of Memorandums of Understandings (MOUs) for timely orders, operating procedures, required reading, operator aid programs, and training. The identified weaknesses required improvements in rigor and formality of operations and strengthening these interface areas with line operations. The LMES CAPs and their implementation for correcting these deficiencies have been reviewed and assessed by YSORT and are judged as acceptable for restart.

The formality and rigor of D&A procedure adherence have been improved by line operations. During the initial assessment period for D&A, it was found that line and support organization personnel did not always recognize procedure inadequacies. As a result, they did not always stop operations to process approved corrections when problems were identified. In response to the findings, the contractor has revised specific procedures, reperformed procedure dry runs as part of the verification and validation (V&V) process, and reemphasized the need for good procedure use practices to its staff. Additionally, LMES has instituted a new procedure control program and has made other program improvements that have been recognized by YSORT. Based on this evidence, the adequacy of operating procedures and program implementation was found acceptable for the D&A mission area restart. (Section 4.3, *Procedures and Programs*).

LMES performance of the routine and off-normal operations drill program was judged as acceptable; however, improvements are required for program maturation. The drill program was very basic and requires continued development with more complex, challenging drills that better test the LMES staff's response and control of the scenarios. Personnel demonstrated an in-depth knowledge of certain evolutions such as operational safety requirements (OSR) inoperabilities; however, the overall program lacked the depth and breath to challenge workers' knowledge and capabilities over a wider range of scenarios. LMES has recognized these weaknesses and has assigned more experienced personnel to this area to provide the needed direction for the required long-term program improvements. Although the drill program was in a maturing

process, the existing program was considered adequate for restart.

The YSORT assessment included a review of the mentor program that included strategies 2 and 3 functions as defined in LMES Y/AD 627, *Mentor Program Description, Revision 1.* The mentors' primary focus has been to provide a compensatory measure in oversight of fissile material activities and to perform assessments of conduct of operations chapter implementation. The two facility mentors assigned to D&A are experienced personnel with strong conduct of operations backgrounds and Naval Nuclear and DOE facility experience. Both mentors have provided the necessary experience base to advise and to mentor facility operations for both operations management and supervisory functions. YSORT has observed the positive results of their efforts in developing the facility Conduct of Operations Program.

The mentors' periodic program assessment of Conduct of Operation implementation was also reviewed, and it appears to be a positive asset in providing self-assessment results to facility operations. The line organization assessment function needs to be developed and implemented to fulfill Chapter I requirements for self-assessments and begin to the phaseout of this interim mentor functions.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3009, 3010, 3011, 3012, 3013, 3014, 3021, 3022, 3034, 3036, 3049, 3051, 3059, 3062, 3063, 3087, 3096, 3100, 3102, 3107, and 3108.

4.2.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Operations Functional Area activities are summarized in Appendix 7.2. The specific finding and contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- Operations procedures could not be performed as written;
- Inadequate documentation of QO Conduct of Operations Program;

- Operations inadequacies and equipment deficiencies with Vacuum Lift Rigs;

- Inadequate rigor and formality of SO implementation;

- Conduct of Operations Manual, Chapter II, requirements were not captured in Daily Administrative Checks (DACs) and the performance of DACs was found to be inadequate;

- Rigor and formality in system status files need improvement to address inadequate configuration drawings of the CAAS and Fire Protection System and inadequate control of configuration drawings;

- Required reading log sheets were incomplete;

- QO operator aids were not adequately integrated with operations;

- QO MOUs were not implemented for SO, required reading and operator aids;

- Timely recognition and prompt corrective action to conduct of operations issues by operations supervision need improvement; and

- DOE Order 5480.19 applicability matrix for D&A was not submitted by LMES.

Several other operations problems are documented in other functional areas of this report including procedures, training and management.

There were 16 pre-restart and 9 post-restart findings identified during the review of this functional area. One of the pre-restart findings remain open at the time of this report's publication. The open finding involves the completion of electrical drawings of the Criticality Accident Alarm and mechanical drawings of the Fire Protection Systems.

4.2.4 Significant YSORT Restart Issues

Except as discussed below, no significant restart issues were identified during the performance of this review. Those findings classified as pre-restart have either been closed or resolved for the purpose of D&A resumption.

The first significant restart issue in Operations Functional Area is the minimum level of conduct of operations implementation achieved by the tenant organizations or support organizations. Although the restart requirements as defined by Document Y/OA-6238 has been achieved, continuous improvement is necessary for long-term success of D&A.

The second significant restart issue concerns the recognition of issues and deficiencies by D&A supervision. YSORT has reviewed the CAPs and the implementation of the plans. In assessing this area, YSORT observed program improvements through the upset condition drills that were used to train and demonstrate the adequacy of D&A supervision to recognize issues and take effective corrective action to deficiencies. Actions taken are adequate for restart of D&A; however, an important post-restart action remains involving the conduct of a formal observation training program. YSORT will assess the adequacy of this training during post-restart period.

4.2.5 Conclusion

Based on the results of the assessment activities associated with COs-19 and -21, the activities performed by LMES are determined to be adequate in meeting the requirements defined by the assessment criteria. The electrical drawings for the Criticality Accident Alarm System (CAAS) and mechanical drawings for the Fire Protection System remain to be completed as a pre-restart action. Post-restart program improvements are required to ensure that maturation and sustainability of conduct of operations continue.

4.3 Procedures and Programs

The YSORT conducted an independent assessment of the LMES procedure activities and observed the use of procedures during execution of special operation packages, procedure V&V activities, procedure dry runs, and performance during the LMES MSA and RA.

4.3.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Procedures and Program Functional Area using the following CO:

CO-07 evaluated the adequacy and correctness of procedures for operating systems and utility systems.

4.3.2 Conditions of Contractor Programs and Procedures

CO-07 has been satisfied in that there are operationally and technically correct procedures that are controlled for use by operations personnel involved in D&A operations. This includes DSO and QO procedures and personnel. D&A personnel are aware of and follow procedural requirements. This has been documented in assessment reports by the YSORT and observations by the MSA Team.

The flow-down of criticality safety approvals (CSA) requirements into procedures for all DSO and QO procedures that are required for the performance of D&A tasks had not been completed at the time of this report. See Section 4.4, Safety Envelope, for results of the YSORT review of incorporating CSA requirements into procedures.

All completed DSO procedures required for D&A tasks have been upgraded using the improved V&V process implemented as a result of the DOE RSS RA findings. The process is cumbersome, but has resulted in an increased level of confidence in the procedures. The V&V process involves getting the proper technical personnel involved during the verification to ensure all the technical concerns and requirements related to the task are correctly implemented. Operations personnel are involved to ensure the procedure can be performed as written. Qualified operations personnel are teamed with an experienced validator during validation to ensure the procedure can be performed as written. During the performance of dry runs for practice and procedure familiarization, it was identified that a number of procedure problems were still appearing. After discussion with DOE, it was decided that whenever possible, a procedure would be performed during validation since that is the only way to truly determine if the procedure is acceptable and adequate. This was expanded to include the use of practice dry runs of procedures for training

purposes to include a procedure writer, who would document procedure improvements, that are identified during the practice. This has resulted in procedures that have caused very few problems during performance demonstrations for LMES MSA and RA teams.

Some problems related to document control of procedures were identified in Building 9204-2E during performance of special operations package activities for QE during November that resulted in a series of findings on document control. These findings identified that Building 9204-2E personnel were not using working copies of procedures, and procedures were located in a reading room that had not been set up as a Document Management Center as required by Procedure Y10-189, *Document Control*. As a result of these findings, DSO and QO management appointed document coordinators for their organizations in Building 9204-2E and established Document Management Centers, with the assistance of the Plant Procedures Group, to control the procedures. By establishing the Document Management Centers and requiring the use of validated working copies, positive control of procedures has been established. Although this has presently solved the document control problem in Building 9204-2E, continued diligence by the coordinators and operations personnel will be required to ensure that the correct version of a procedure is used.

Personnel training on the latest revision of procedures is tracked using the Training Management System (TMS), and supervisors are directed to verify training records prior to performing a pre-job brief. The DSO training organization has been effective in ensuring that DSO personnel are trained on procedure revisions prior to the effective date of the revision. Some problems were noted in the qualification of QO personnel, but observation of QO pre-job briefs revealed that the supervisors did an effective job of informing personnel of changes to procedures. The QO has also implemented a method similar to DSO for tracking training on procedures.

All DSO and QO personnel required to support D&A activities had completed the Conduct of Operations Manual, Chapter XVI, training module on "Procedure Use and Adherence." This is an effective training module that covers the conceivable procedure circumstances with which personnel could be presented during the performance of their jobs. The training was well presented and

resulted in personnel having a much better understanding and appreciation of procedure use and adherence requirements. During level of knowledge interviews and performance of evolutions for the LMES MSA and RA teams, it was evident that personnel were knowledgeable of the requirements and demonstrated attention to detail during the performance of procedures.

The QO had not performed dry runs of procedures, other than radiography, prior to the MSA. During a dry run of the Mauser procedure, the operator was observed referring to a notebook that subsequently was discovered to contain old, out-of-date drawings and instructions used in setting up the Mauser for particular measurements. In addition, none of the Material Testing Laboratory procedures were scheduled for demonstration prior to resumption. This resulted in DOE expressing concerns about the effectiveness of the procedures and the operator familiarity with the procedures. As a result of the observations and concerns and some related findings, the QO instituted the use of practice dry runs of procedures to familiarize personnel with the procedures and to confirm the useability of the procedures. The old, out-of-date documents were removed from the work place or validated for useability. As a result of concerns noted by the LMES RA team, 27 QO procedures were walked down and revised as necessary.

A large number of procedure V&Vs were observed to determine the effectiveness of the new program and to evaluate the quality of the procedures for D&A. A significant amount of staff resources has been committed by LMES to ensuring V&V activities are completed successfully, which has resulted in the V&V being cumbersome and time consuming (sometimes taking 2 days to complete a verification). Discussions with LMES personnel led to the conclusion that this commitment of resources was necessary due to inadequacies in the development and technical review stages of the procedure process. This has been documented in a post-restart finding that should result in LMES' improving the overall procedure process. The primary causes of the problem appear to be a lack of attention to detail, inadequate training, and lack of proper definition of responsibilities of SMEs and procedure owners.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3026, 3031, 3066, 3068, 3092, 3093.

4.3.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Procedures and Programs Functional Area are summarized in Appendix 7.2. The specific findings and the contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- Document control of procedures in Building 9204-2E was not effective;
- Working copies of procedures were not being used for performance of tasks;
- A Document Management Center was not established in 9204-2E;
- Surveillance procedure for Fire Sprinkler System did not include instructions for performance of the procedure nor address partial performance of the procedure;
- QO procedures and instructions were in use that had not been upgraded since April 1, 1995; and
- QO used old, out-of-date, and non-validated documents for guidance in the performance of D&A-related tasks.

There were six pre-restart and five post-restart finding identified during the review of this functional area.

4.3.4 Significant YSORT Restart Issues

Except as discussed below, no significant restart issues were identified during the performance of this review remain open.

There is continued concern for the adequacy of site-wide procedure and document control programs that are still developing to the level where there is confidence that procedures produced will be technically and operationally correct and the operators will always have the current version of the procedures available for use. Compensatory measures have had to be put in place to ensure the quality and timeliness of procedures. Correction of these weaknesses will require training and management attention over a period of time to resolve.

4.3.5 Conclusion

Based on the results of the assessment activities associated with CO-07, the D&A procedures required for restart are adequate and correct, personnel are trained on the latest revisions of procedures, and procedure revisions are adequately controlled for restart. Problems with procedure performance have been corrected through practice dry runs, training, and procedure revisions. Problems with the adequacy of QO procedures and document control have been acceptably resolved.

Procedures and Programs will require the personnel to continue to use the same level of diligence in ensuring that procedures are correct and in the use of procedures.

4.4 Safety Envelope

The YSORT evaluated LMES implementation of authorization basis documentation and the associated implementing procedures for D&A resumption readiness. The YSORT also performed reviews to confirm the establishment of a program to verify operability and to periodically reconfirm operability of the two OSR-controlled safety-significant systems, Fire Protection, and CAAS. These reviews focused on surveillance testing, preventive maintenance (PM), and instrument calibration.

The YSORT also evaluated D&A CSAs and procedures to determine that technical procedures adequately implement CSA requirements. This evaluation involved a review of the CSAs and operating procedures associated with D&A; interviews with personnel from the NCSD, DSO, and QO; walkdowns of all CSAs to ensure that the facility conditions reflect the criticality safety limits and controls; observation of dry runs to verify that criticality safety operating limits and controls are effectively implemented in the facility; and observation of the interface between NCSD and Operations for establishing criticality safety controls in operating procedures.

The YSORT observed various LMES field activities and performance of the LMES MSA and RA in support of the above reviews.

4.4.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Safety Envelope Functional Area using the following COs:

CO-04 verified the existence of adequate and correct safety limits for operating systems.

CO-10 verified that a program was in place to confirm, and periodically reconfirm, the condition and operability of safety systems, including safety-related process systems and safety-related utility systems.

CO-11 confirmed that safety systems and other instruments which monitor technical safety requirements are monitored for calibration.

CO-12 ensured that all safety and safety-related utility systems are currently operational and in a satisfactory condition.

4.4.2 Conditions of Contractor Programs and Procedures

The OSR for D&A, specifically for Buildings 9204-2 and 9204-2E, was reviewed by YSORT. This review, which consisted of walkdowns and observation of surveillance testing, determined that the OSR was technically accurate and consistent with the physical facility configuration. The YSORT noted that the D&A OSR had also been reviewed during the RSS RA and revised to resolve pre-restart RSS findings. During the D&A review, several LMES MSA and RA observations and findings were identified regarding a lack of clarity of OSR requirements in surveillance procedures and the procedures not containing all applicable OSR requirements. However, the YSORT found that the surveillance procedures do contain appropriate references to the OSR Limiting Conditions for Operations (LCO) action statements when system operability is in question.

The YSORT conducted reviews to confirm the establishment of a program to verify operability and to periodically reconfirm operability of the safety-significant systems, Fire Protection System and CAAS. As was the case with the OSR discussed above, this review had also been performed during the RSS RA. The YSORT, MSA, and LMES RA identified additional observations and findings in this functional area during the D&A review. These included

procedure errors involving CAAS post-maintenance testing and surveillance testing and the failure to follow fire-cycle surveillance test procedures. Additionally, the CAAS surveillance test procedure had been revised to resolve a pre-restart RSS deficiency involving audibility checks of CAAS horns and sirens, but deficiencies were subsequently identified in the associated job aids. Deficiencies were also identified in the safety-significant PM procedures. Specifically, inadequate justification was provided to allow a revision to the CAAS PM procedure that incorporated a CAAS detector setpoint change. Additionally, all fire protection PM procedures have not been issued.

Implementation of DOE Order 5480.21, *Unreviewed Safety Questions (USQs)*, continues to be inadequate as evidenced by the identification of additional YSORT findings. Similar deficiencies were also identified during the RSS resumption assessment and indicate a site-wide programmatic implementation failure. A formal root-cause analysis was conducted, and a corrective action was approved to address unreviewed safety question determinations (USQD) deficiencies. Corrective actions are in progress and are adequate to support resumption.

In accordance with the procedures governing the CSA process, LMES conducted a criticality safety review, which included a physical walkdown, of all CSAs associated with D&A. NCSD, DSO, and QO participated in the V&V of CSA requirements. The V&V process provided CSAs with essential criticality safety limits and controls. However, the current CSA process does not always produce limits and controls that can be incorporated into procedures. Specifically, CSAs do not always quantify limits, establish maintenance and surveillance requirements for physical controls, delineate sampling and measurement requirements, define terms to establish the verifiability of controls, and prescribe actions for NCSD response to abnormal conditions.

Consequently, CSA requirements were not always adequately incorporated into approved procedures. Several deficiencies in how CSA requirements were not incorporated into procedures include: physical criticality safety requirements were specified without any administrative action by the procedure user; CSA requirements were restated rather than specifying requirements as operating instructions; specific control application for CSA requirements were not identified; and terms to establish the

verifiability of controls were not defined. Although these deficiencies create procedures that are cumbersome and rely upon the diligence of operators and NCSD engineers during the V&V of the procedures, they are an improvement to the operator being required to use both the procedure and the CSA. Despite the above identified deficiencies, the CSAs and the procedures which have incorporated the CSA requirements are adequate for resumption of D&A. The incorporation of CSA requirements into procedures was not completed at the time of this report but is required prior to restart.

While the process for integrating CSA requirements into procedures is immature, the need to establish guidance and provide a better interface between NCSD and Operations for establishing criticality safety controls into operating procedures are addressed in the CAPs. As part of the corrective actions in response to the YSORT D&A findings, NCSD has developed a SO to identify objectives and criteria for technical guidance in the development of procedures that govern fissile material activities. The SO is an interim action until an internal NCSD procedure that contains the appropriate guidance is developed. This guidance will provide support for communicating criticality safety controls in operating procedures rather than CSAs. Furthermore, supervisory and worker participation in the validation of CSAs is a mandate of the CSA process. This validation ensures that the CSA requirements being incorporated into procedures are understandable to supervisors and workers.

In regards to criticality safety postings, the CSAs associated with D&A do not always ensure that the signs specify all parameters subject to procedural control. The deficiency of criticality safety postings was identified as an RSS post-restart programmatic issue. A formal plan and schedule have been provided for addressing posting inadequacies, which includes reviewing current criticality safety posting practices against DOE Order 5480.24, *Nuclear Criticality Safety*, and American National Standards and American National Standards Institute (ANS/ANSI) standards.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 1603, 3000, 3006, 3045, 3064, 3067, 3074, 3091, 3095, 3098, and 3099.

4.4.3 YSORT Finding/Issue Closure

The findings identified by the YSORT in this Safety Envelope Functional Area are summarized in Appendix 7.2. The specific findings and the contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- USQs were not properly performed (three examples);
- CAAS surveillance procedure job aids were deficient;
- CAAS horns were deficient;
- Procedures do not always include controls and limits significant to the criticality safety of the operation, and do not always specify all parameters they are intended to control;
- No criteria exist for NCSD to provide technical guidance in the development of operating procedures or in the improvement of criticality safety practices and procedural requirements; and
- Supervisor/worker participation in the review of CSAs and the incorporation of CSA requirements into procedures is not evident.

There were four pre-restart and eight post-restart findings identified during the Safety Envelope Functional Area. One pre-restart finding remains open at this report's publication. The open finding involves the incorporations of CSA requirements into procedures. LMES has taken sufficient action to close the remaining pre-restart findings or taken acceptable compensatory actions to address the concerns in the interim.

4.4.4 Significant YSORT Restart Issues

No significant restart issues were identified during the performance of this review. Those findings classified as pre-restart have either been closed or resolved for the purpose of D&A resumption.

4.4.5 Conclusion

Based on the results of the assessment activities associated with COs-4, -10, -11, and -12, the activities performed by LMES are determined to be adequate in meeting the requirements as identified by assessment criteria. All activities that are required by Document Y/OA-6238 have been completed at a level necessary to support resumption of D&A.

4.5 Training and Qualification/Level of Knowledge

The YSORT assessed the status of training and qualification and the level of knowledge of D&A personnel to determine readiness to resume D&A activities. This assessment included the review of programs and training records, the performance of the LMES MSA and RA, and the actions taken by LMES to correct YSORT and other findings. Personnel from DSO, QO, PSS, Facility Maintenance Organization (FMO), Fire Department, and NCSD were included in the scope of this review as defined by the LMES D&A resumption crew rosters.

4.5.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Training and Qualification/Level of Knowledge Functional Area using the following COs:

CO-13 verified the training and qualification programs for operations personnel have been established, documented, and implemented and cover the range of duties required to be performed.

CO-14 verified the technical qualifications of contractor personnel responsible for facility operations were adequate.

CO-16 verified training has been performed to the latest revision of procedures.

CO-17 verified the level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance.

CO-18 verified that there are sufficient numbers of qualified personnel to support safe operations.

CO-23 verified the management qualification or contractor personnel responsible for facility operations are adequate.

4.5.2 Conditions of Contractor Programs and Procedures

The staffing of the D&A mission area includes personnel from DSO, QO, FMO, PSS, Fire Department, and NCSD. Within the DSO, QO, FMO, and NCSD, personnel are required to be qualified or certified as defined by the Y-12 TIM. The Y-12 TIM does not address the PSS or Fire Department. Acceptance of PSS and Fire Department personnel readiness to resume safe operation of the D&A mission area is based on completion of required training that supports their ability to conduct surveillance testing of the safety-significant systems associated with D&A. The training programs and the personnel training status for each of these organizations were assessed during the D&A Training and Qualification/Level of Knowledge Functional Area review.

Personnel from the DSO were involved in the resumption of RSS. During the RSS review, the DSO training programs and the status of personnel certification and qualification were determined to be acceptable. New certifications for D&A tasks only affected the assembly/disassembly positions. All other DSO positions met certification/qualification requirements during the RSS resumption process. A training and qualification record review was performed for the DSO and was determined to meet the minimum staffing requirements to support a safe D&A resumption.

Certification and qualification records of personnel from the QO determined the QO could support the minimum staffing requirements established by QO for D&A resumption. The YSORT review is based on these personnel meeting the minimum educational and experience requirements, signed qualification cards, comprehensive written examination results, oral examination results, and the certification endorsements made by QO management. However, during the LMES RA, the integrity of the QO examinations was challenged. To address this LMES RA concern, the LMES line management conducted a review of all qualification/certification examinations for QO personnel on the D&A resumption crew. This review determined a total of four QO personnel failed the comprehensive written examinations. The failures included two metallurgist, one dimensional inspector, and one radiographer. These personnel were placed in remediation training and, to date, three of them were

recertified. The QO also made some programmatic changes to prevent recurrence of this condition. The LMES RA reviewed these corrective actions and determined them to be satisfactory.
The FMO was determined to have no personnel qualified as required by the Y-12 Training Implementation Matrix (TIM) and will not be able to complete FMO qualifications to support the D&A resumption schedule. FMO proposed a task qualification of FMO personnel in order to support the D&A resumption schedule. YSORT has accepted a task qualification of FMO personnel as a means to support D&A resumption. A review of these records determined that FMO meets the minimum staffing requirements that they established for D&A resumption.

The PSS and the Fire Department training and qualification programs are in a similar condition. Both organizations have personnel assigned to D&A that were not included in the Y-12 TIM prior to the YSORT review of D&A. Since these organizations have not been in the Y-12 TIM, no effort was ongoing to train and qualify applicable PSS and Fire Department personnel under the requirements of DOE Order 5480.20/20A, *Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities*. This condition does not allow the Fire Department and the PSS to upgrade their training and qualification programs to the DOE Order requirements and support the D&A resumption schedule. The YSORT determination of personnel readiness for Fire Department and PSS personnel was based on satisfactory completion of training requirements established to support applicable D&A tasks. Submittal of acceptable records to document satisfactory completion required D&A training that will support meeting the minimum PSS and Fire Department staffing requirements has been completed or reviewed by YSORT and is adequate for restart of D&A.

The NCSD personnel assigned to D&A were included on the resumption crew for RSS. The training and qualification process in the NCSD for these incumbent personnel was determined to be acceptable to support RSS. No new training requirements were identified for NCSD personnel for D&A tasks and, therefore, the NCSD training and qualification process was determined to be acceptable for D&A Resumption. A review of NCSD training and qualification records was conducted and they were determined to support the NCSD minimum staffing requirements for a safe D&A resumption.

YSORT was not able to complete the review required by CO-16 because the D&A procedures had not been revised. CO-16 verified that training had been performed to the latest revision of the procedures. A pre-restart finding was issued by YSORT to document this condition. This finding remains open at the time of this report.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3001, 3002, 3008, 3015, 3018, 3030, 3035, 3039, 3040, 3046, 3047, 3048, 3050, 3052, 3053, 3054, 3058, 3060, 3065, 3069, 3070, 3071, 3073, 3077, 3083, 3084, 3085, 3086, 3088, 3090, 3094, and 3109.

4.5.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Training and Qualification/Level of Knowledge Functional Area are summarized in Appendix 7.2. The specific findings and the contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- All key personnel and supervisors and support personnel required to resume safe operation had not been identified;
- A DSO supervisor's education and experience history were not evaluated against DOE Order 5480.20A criteria;
- Fire Department and PSS positions had not been categorized under DOE Order 5480.20A and personnel had not been evaluated against the Order for minimum education and experience;
- The PSS, DUO, FMO, and the Fire Department had not provided their minimum staffing requirements for the D&A resumption;
- Personnel on the D&A resumption crew from the Fire Department, PSS, NCSD, and DSO were deficient in their Energy Systems and/or their unescorted access to the Y-12 MAA training requirements;
- PSS and Fire Department training requirements had not been identified for safe resumption of D&A;

- A significant number of procedures are scheduled for revision to support D&A resumption and personnel will need to receive appropriate training following the completion of the YSORT review;

- Controls established by NCSD, PSS, and the Fire Department to ensure that only trained and qualified personnel are assigned work were determined to be ineffective;

- The PSS, FMO, Fire Department, QO, and DSO training and qualification record files did not include education and experience histories, medicals, training exception approval forms, and/or qualification cards for all personnel on the D&A resumption crew; and

- Minimum staffing requirements were not supported by the training record files for the PSS, FMO, and the Fire Department.

There were 17 pre-restart and 15 post-restart findings identified during the review of this functional area. One pre-restart remains open at the time of this reports publication. The open pre-restart finding is the training on procedures which have not been completed. LMES has taken sufficient action to resolve or close the remaining pre-restart findings.

4.5.4 Significant YSORT Restart Issues

No significant restart issues were identified during the performance of this review. Those findings classified as pre-restart have either been closed or resolved for the purpose of D&A resumption.

4.5.5 Conclusion

Based on the results of the assessment activities associated with CO-13, -14, -16, -17, and -23, the activities performed by LMES are determined to be adequate in meeting the requirements defined by the assessment criteria, noting that pre-restart findings remain to be closed. All activities required by the Document Y/OA-6238 have been completed to a level necessary to support resumption of D&A Operations.

4.6 Startup Test and Assessments

YSORT evaluated the scope and content of the Startup Test and Assessments Functional Area, using the criteria specified in the YSORT Assessment Plan. This assessment included independent reviews of the program and procedures; comparison of field conditions and procedures with the program documents; observation of related activities of both the LMES MSA and RA Teams; and evaluation of actions taken by LMES with respect to previous and current findings of the LMES MSA and RA and YSORT.

Training was addressed only with respect to operator performance as an indicator of its adequacy. The viability of procedures was addressed only with respect to the observed activities. Other aspects of procedures and training are more comprehensively addressed in the Sections 4.3 and 4.5 of this report.

4.6.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Startup Test and Assessments Functional Area using the following COs:

CO-28 required verification that an adequate restart test program had been developed which includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.

CO-30 required verification that the breadth, depth, and results of the contractor RA are adequate to verify the readiness of hardware, personnel, and management programs for operations. This CO also verified that the contractor MSA was adequately implemented and that identified deficiencies were resolved and/or closed acceptably.

4.6.2 Conditions of Contractor Programs and Procedures

4.6.2.1 Core Objective 28

Document Y/OA-6238, Prerequisite 11 (PR-11), stated that all systems and components necessary for the processes that were being restarted had been identified, that all maintenance calibrations

and surveillances would be current, and that the start up test program and system walkdowns would verify restart readiness. Based on the PR-11 statements, LMES management position has been that a restart test program is not required. The MSA confirmed that a restart test program had not been developed and that there was an insufficient number of dry runs to observe that demonstrated system and equipment operability. Also, several past due calibrations and maintenance were noted. The MSA also found an evidence package deficiency involving an out-of-date list of equipment to be restarted. YSORT concurred with these findings and evidence file deficiency. The MSA findings prompted LMES to conduct seven additional dry runs and repeat the three original dry runs.

The original dry runs did not demonstrate the operability of all the equipment required for resumption. The MSA issued a finding that a restart test program had not been developed as a result of the lack of demonstration of equipment operability during the dry runs. Subsequent to the MSA an additional seven dry runs and a repeat of the original ones were conducted. There were a total of six dry runs that involved partial equipment operation. These dry runs, where equipment was exercised, essentially duplicated a start up test of that equipment and therefore adequately addressed these issues. LMES management had not previously understood the necessity of exercising both operators and equipment after a long stand down.

The LMES RA identified numerous equipment not on the updated equipment list for restart that were out of their calibration/maintenance cycles. In addition, the LMES RA identified that equipment not required for resumption had not been administratively tagged out of service. Most of these deficiencies were associated with the QO because the equipment in question was their responsibility. Also identified was that a number of maintenance tasks needed to be completed to support resumption. To address this issue LMES performed walkdowns of this equipment and initiated the appropriate maintenance job requests where needed. YSORT concurred with these findings.

YSORT also identified a concern with the accuracy of the air flow indication by the gauge mounted on the walk-in hood during the RA. Further investigation indicated that the gauge air flow indication was verified during the quarterly survey (i.e., operability

inspection/test) that determines the acceptability of the hood for operations. However, the procedure used for accomplishing this survey lacked any detail on the activity. YSORT issued a finding that was resolved by an LMES commitment that the survey activities would be technically justified and specifically delineated in a procedure prior to the quarterly survey after resumption of operations. Another deficiency identified was that pressure and vacuum gauges on lifting fixtures were not calibrated throughout Y-12 facilities. LMES initiated a corrective action to replace the suspect gauges on a fixture with calibrated instruments and committed to tag similar fixtures in other Y-12 facilities as out-of-service pending further evaluation.

4.6.2.2 Core Objective 30

The YSORT evaluation of the LMES MSA included review of the development and execution of the assessment implementation plan evaluation criteria and methodology; observation of LMES assessment activities; and, the evaluation of the resolutions for the MSA identified deficiencies. The overall process was acceptably implemented but the LMES MSA conclusions in the Operations Functional Area were considered inappropriate by YSORT.

The number and extent of operational activity dry run observations were initially insufficient to confirm operational readiness. Further, the results of the dry runs indicated weaknesses. In one case, a dry run evolution had to be stopped because of unfamiliarity with the applicable procedures. Procedure noncompliances were observed in several others, and personnel were found to be unaware of the Y-12 procedure compliance policies.

In spite of these results, the MSA concluded that implementation of conduct of operations requirements was adequate to support resumption. YSORT initially considered that the MSA was less than adequate in that it should have concluded the Operations Functional Area to be unsatisfactory subject to more substantial corrective actions and a subsequent reassessment of the entire Operations Functional Area.

In response to a DOE request, more dry runs were eventually conducted and the MSA partially reconvened because of the insufficient data. In these later dry runs, the LMES staff's performance in the additional exercises was adequate.

Subsequently, the LMES RA determined that sufficient improvement had occurred to warrant a conclusion of operational readiness.

An assessment was performed to evaluate the LMES RA to determine if the breadth, depth, and results are adequate to verify the readiness of hardware, personnel, and management programs to support resumption of D&A operations. Also included in this evaluation was a review of the actions and/or compensatory measures taken to resolve/close pre-restart findings that were identified by the LMES RA team. The assessment was performed by a combination of observations and document reviews. The LMES RA team was observed performing interviews, document reviews, and field activities.

Observations of LMES RA Team activities indicate a comprehensive review in accordance with their assessment plan. The qualifications of the team participants were reviewed and determined to be adequate in meeting recognized criteria for performing an independent assessment. The training of the LMES RA team was determined to be adequate to familiarize the team on the scope of the assessment and on those activities required to perform an effective LMES RA. From a review of the Criteria and Review Approach Documents, it was determined that the breadth, and depth of the LMES RA was adequate to verify the readiness of hardware, personnel, and management programs to support the resumption of D&A operations.

The initial review by the LMES RA concluded that only the C5 disassembly and electron beam welder was ready for operations, and that activities performed by the QO were not ready. The initial review documented 16 pre-restart findings and 3 post-restart findings. An additional assessment of the QO was conducted which documented an additional two pre-restart findings. YSORT conducted a review of the actions taken by LMES to resolve and close the pre-restart findings.

YSORT conducted a review to determine the adequacy of corrective actions to resolve and close the post-restart findings. From this review YSORT identified an issue whereby LMES was statusing the LMES RA deficiencies as "closed" prior to the completion of the corrective action. As such a post-restart finding was written documenting the deficiency as a violation of LMES Procedure QA-16.1. This finding prompted LMES to initiate a reverification of

all closed LMES RA findings. This reverification identified two findings that were closed without full completion of the work, and some closed findings that contained evidence file deficiencies. The two findings are open issues at the time of this report.

Based on the results from the assessment activities including information received from YSORT personnel, it is concluded that the LMES RA was performed in a manner to effectively establish the readiness of D&A to resume operations. The activities performed by LMES were determined to be adequate in satisfying the acceptance criteria associated with this assessment activity Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3103, 3104, 3105, 3106, 3110, and 3111.

4.6.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Startup Test and Assessments Functional Area are summarized in Appendix 7.2. The specific findings and contractor response documentation will be available in YSORT evidence files. Two post-restart findings were identified during the review of this functional area.

4.6.4 Significant YSORT Restart Issues

No significant restart issues were identified during the performance of this review. Those findings classified as pre-restart have either been closed or resolved for the purpose of D&A resumption.

4.6.5 Conclusion

Based on the results of the assessment activities associated with CO-28 and 30, the activities performed by LMES are determined adequate for restart. The MSA was adequate, but conclusions drawn by the MSA were not consistent with identified problems. The LMES RA was adequate in meeting the requirements defined by the LMES, Document Y/OA-6245, "Implementation Plan for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and specified in DOE Order 5480.31

5.0 CONCLUSIONS

The consensus of the YSORT, from the evidence obtained, indicates that LMES is adequately prepared to resume D&A activities as defined by Document Y/OA-6238. Subsequent resumption of additional D&A activities must be evaluated in accordance with LMES Procedure Y10-190, *New Activity Start-up Requirements*. This conclusion is based on (1) the evaluation of the LMES MSA; (2) the evaluation of the LMES RA; (3) assessments by the YSORT members; and (4) adequate closure and/or resolution of all pre-restart findings identified by the LMES MSA, LMES RA, and YSORT pre-restart findings. In addition, YSORT confirmed completion of the LMES RA Prerequisites identified in the Document Y/OA-6238.

As discussed in this report, there are three YSORT pre-restart findings remaining open upon publication of this report. These findings include 1) inadequate safety system configuration drawings (See Section 4.2); 2) procedure revisions and associated training (See Section 4.5); and 3) procedures not always incorporating CSA limits and conditions (See Section 4.4). In addition, three pre-restart LMES RA issues remain open. These issues include 1) completion of QO CSA revisions for deficiencies identified by the LMES RA; 2) correction of equipment deficiencies identified on the list of equipment required for restart; and 3) completion of training for the QO on Nuclear Operation Conduct of Operations Manual, Chapter 5, *On the Job Training*. These findings must be completed and verified by YSORT prior to resumption of D&A activities.

Post-restart findings from this review will be entered into the YSO Deficiency Tracking Database and tracked to closure.

6.0 ACRONYMS

ANS	American National Standards
ANSI	American National Standards Institute
CAP	Corrective Action Plan
CSA	Criticality Safety Approval
CAAS	Criticality Accident Alarm System
CO	Core Objectives
D&A	Disassembly and Assembly
DOE	Department of Energy
DNFSB	Defense Nuclear Facilities Safety Board
DSO	Disassembly and Storage Organization

ESAMS	Energy Systems Action Management System
FMO	Facility Maintenance Organization
LCO	Limiting Conditions for Operations
LMES	Lockheed Martin Energy Systems, Inc.
MMES	Martin Marietta Energy System, Inc.
MSA	Management Self-Assessment
MOU	Memorandum of Understanding
NCSD	Nuclear Criticality Safety Department
ORO	Oak Ridge Operations
OSR	Operational Safety Requirements
PM	Preventive Maintenance
PSS	Plant Shift Superintendent
QE	Quality Evaluation
QO	Quality Organization
RA	Readiness Assessment
RadCon	Radiological Control
RFA	Request for Approval
RFC	Request for Closure
RSS	Receipt, Storage, and Shipment
RWP	Radiological Work Permit
STA	Shift Technical Advisor
SME	Subject Matter Expert
SO	Standing Order
TIM	Training Implementation Matrix
TMS	Training Management System
USQ	Unreviewed Safety Question
USQD	Unreviewed Safety Question Determination
V&V	Verification and Validation
YSO	Y-12 Site Office
YSORT	Y-12 Site Office Restart Team

7.0 APPENDICES

7.1 Team List and Biographies

Y-12 SITE OFFICE RESTART TEAM

Restart Manager	-	Thomas S. Tison
Team Leader	-	Dale E. Christenson
Team Leader	-	Mark A. Sundie
Resumption Area Lead	-	Frank S. Poppell

FUNCTIONAL AREA	TEAM MEMBER
Management	Randy C. Foust (Lead) Richard L. Renne Peter R. Kulesza
Operations	Gary F. Weston (Lead) Dennis O. Myers Mike C. Klanecky
Procedures and Programs	Gerald R. Mountain (Lead) Charles H. Robinson
Safety Envelope	Kirk W. Van Dyne (Lead) Charles H. Robinson
Training and Qualifications/Level of Knowledge	Thomas Rogers
Startup Test and Assessments	George Napuda (Lead) Wayne L. Britz
Technical Editor	Donald A. Beckman
Administrative Support	Kimberly E. Hurd (Lead) Kay F. Dutton Nicola P. White

YSORT Biographies

Donald A. Beckman

Mr. Beckman has 25 years experience in the management, operation, maintenance, design, and regulation of nuclear power plants and defense facilities. He holds a B.S. degree in Marine Engineering from the U.S. Merchant Marine Academy, 1969. Since 1982, he has been providing consulting services to government and industry. His assignments support nuclear utilities and the Department of Energy (DOE) in the development and evaluation of management programs. Ongoing engagements include support to the Nuclear Regulatory Commission (NRC) in special inspections, support to the DOE for management of production programs, major design and construction projects, facility startup and restart, and to nuclear utilities in the areas of management and quality program support. Prior to his consulting career, Mr. Beckman was the first NRC Senior Resident Inspector assigned to the Beaver Valley Power Station in 1979. His career with NRC spanned 1977-1982 and included duty as a region-based inspector in the areas of operator training, quality assurance, operations, maintenance, and engineering. He was part of NRC's immediate response team for the Three Mile Island Accident. His last assignment involved management of an engineering section responsible for general systems engineering, fire protection, environmental qualification of electrical equipment, and related subjects. From 1976 to 1977, Mr. Beckman was a startup and test supervisor for Burns and Roe's for the Clinch River Breeder Reactor and a variety of nuclear and non-nuclear generating station projects. In 1971, Mr. Beckman, as a test engineer for submarine reactor plants, joined Newport News Shipbuilding and Dry Dock. During the next 5 years, he certified as Shift Test Engineer, directed the refueling and overhaul activities of nearly two dozen nuclear submarines, and served as Chief Test Engineer and Delivery Engineer for the last two 637 Class attack boats. From 1969 to 1971, Mr. Beckman served as a U.S. Coast Guard and U.S. Atomic Energy Commission-licensed engineering officer on board the Nuclear Ship Savannah, the first and only U.S. civilian-operated, nuclear-powered merchant ship culminating as a shift supervisor. He also served intermittently as an engineering officer on oil-fired steam and diesel-powered merchant ships.

Wayne L. Britz

Mr. Britz received a B.S. degree from the U. S. Merchant Marine Academy and a M.S. degree in Nuclear Engineering, from the Georgia Institute of Technology. He was a nuclear engineer, health physicist, deck officer, and an Atomic Energy Commission-licensed reactor operator on the Nuclear Ship Savannah from 1966 to 1970. He was an inspector, nuclear engineer, and health physicist for the Atomic Energy Commission/Nuclear Regulatory Commission from 1971-80 where he developed criteria and guides supporting regulations, and evaluated systems for their ability to meet regulatory requirements. He was Manager of Radiation Protection Services at Public Services Electric and Gas Company (PSE&G) from 1980 to 1986 where he was responsible for the radiological protection program for the Salem and Hope Creek nuclear power plants to comply with Nuclear Regulatory Commission regulations. At PSE&G, he was responsible for the radiological environmental monitoring program and for radiological support to the emergency preparedness program. He provided expert witness and written testimony to the government and private industry. Since 1986, Mr. Britz has been a consultant to various government agencies, nuclear power utilities, and private industry. He served as a Project Manager for the Center for Disease Control's dose reconstruction project at the Idaho National Engineering Laboratory. He was a member of the DOE Plutonium Vulnerability Study at the Pantex Plant. He has conducted Operational Readiness Reviews for the Department of Energy at Rocky Flats, the Waste Isolation Pilot Plant, and Savannah River.

Dale E. Christenson

Mr. Christenson received a B.S. degree, in Civil Engineering from the University of Washington and a M.S. degree, in Civil Engineering from the University of Maryland. He is a registered Professional Engineer in the State of Maryland. He has five years experience in the nuclear operations field. As an officer in the Department of Defense, he served for eight years in the Naval Nuclear Reactor program, which is recognized as one of the most respected nuclear programs in the country. While in the Navy, he served in the engineering department for three years and was certified to act as an Engineer on board U.S. Naval Vessels with nuclear plants. He joined the Department of Energy (DOE) in 1991 and has been a member of Y-12 Site Office since August 1994. Mr. Christenson has completed the Conduct of Operations assessment training conducted by EM-25. He has also received training on DOE Order 5480.31, "Restart of Nuclear Facilities." He has been instrumental in the development of the Plan of Action for the "DOE Readiness Assessment for Receipt, Shipment, and Storage of Special Nuclear Material at Y-12 Plant."

Randy C. Foust

Mr. Foust received a B.S. degree, in Mechanical Engineering and a M.A. degree, in Business Administration from the University of Tennessee, Knoxville, and has 15 years experience in the nuclear field. Prior to his current assignment at the Department of Energy (DOE) Y-12 Site Office, Mr. Foust spent 5 years at DOE's Savannah River (SR) plant where he was initially employed by Westinghouse Savannah River Company (WSRC) in the Reactor Quality Assurance Department of the Reactor Division and later transferred to the Environmental Protection Department of the ESH&QA Division. At SR, Mr. Foust was assigned duties of Division Coordinator for interface and resolution of DOE Findings, Lead Quality Engineer for the review of Design Modification Packages, ALARA Committee Member, Quality Representative on the Startup Test Review Board, Principal Engineer/Team Lead on the Readiness Self Assessment for Chargeback and Restart of K-Reactor, and Environmental Support and Regulatory Interface for Transition and Decontamination & Decommissioning activities. Prior to joining WSRC, Mr. Foust spent 10 years working in the commercial nuclear field. Initially, Mr. Foust worked for the Tennessee Valley Authority where he was assigned duties of Responsible Systems Engineer for the construction, modification and testing of NSSS and Safety Systems on a Westinghouse PWR, and later, Staff Specialist on Environmental Qualification per 10CFR50.49. He also worked on the Clinch River Breeder Reactor Project as an Assistant Cognizant Engineer for Westinghouse, Advance Reactor Division, and spent two years working as a Marketing Manager and Senior Environmental Qualification Engineer for a independent engineering materials testing laboratory.

Peter R. Kulesza

Mr. Kulesza received a B.S. degree, in Mechanical Engineering from Bucknell University and has over 14 years of experience in the nuclear field. Prior to joining DOE's Restart Team at Y-12, he was employed by Midwest Technical Inc. During that two-year period, he worked as the assistant manager and coordinator for the condition assessment survey of facilities at Y-12. Mr. Kulesza worked for Lockwood Greene Engineers for 11 years in various capacities ranging from lead engineer to planning consultant. His responsibilities included determining the scope, schedule, and budget for projects, as well as managing all technical disciplines for several interstate projects simultaneously. While with Lockwood Greene, Mr. Kulesza was involved with facility, utility, and process upgrades, and conceptual designs. The work encompassed chilled water, steam, compressed air, perchloroethylene, oxygen, ventilation, and acid recovery systems; biodenitrification; uranium reclamation processes from digestion to derby production; vacuum casting and ingot processing; core element machining; and scrap processing. He has also conducted process improvement work for the metals, heat pump, and rubber industries. This work was performed in facilities in Tennessee, Kentucky, and Ohio.

Gerald R. Mountain

Mr. Mountain has A.S. and B.S. degrees, in Nuclear Engineering and over 25 years experience in the nuclear field. He is a Cum Laude graduate of North Carolina State University and a graduate of the Navy nuclear power program. Since 1992, he has been involved full time in supporting The Department of Energy (DOE) and its contractors in the areas of procedure program development, assessment, and improvement. During 1992, he served as a mentor for EG&G Rocky Flats to the Director, Plant Procedures. Tasks performed included assessment of the plant procedure and document control programs and development and implementation of program improvements. In 1993 he supported the staff of the Office of Nuclear Safety by assisting in the implementation of a new division procedure program, developing a DOE Facility Procedure Program Assessment Plan, performing procedure program assessments, and was a member of the DOE Spent Fuel Task Force that performed assessments of the status of spent fuel facilities at eleven DOE facilities. Mr. Mountain is a member of the DOE Procedure Standards Committee, which has been responsible for the development of DOE standards on procedures. During 1994, he performed an order compliance assessment at Pantex for Mason & Hanger on DOE Orders 5480.21, 22, 23, and 24. In the commercial nuclear field, he has been an Nuclear Regulatory Commission Licensed Senior Reactor Operator at a commercial boiling water reactor (BWR), a procedure program manager, an operator trainer, and technical consultant. From 1978 to 1981 he was the Inspection Manager for BWR inspection for American Nuclear Insurers (ANI) where he was responsible for the management and performance of ANI semi-annual inspection activities at all commercial BWRs. During this time, he was also a certified Quality Assurance lead auditor. Prior to entering the commercial nuclear industry, he served ten years in the U.S. Navy as a Reactor Operator, Gunnery Officer, ASW Officer, and is a graduate of the Naval Enlisted Scientific Education Program.

Dennis O. Myers

Mr. Myers has a B.S. in Mechanical Engineering from the University of Virginia, and is a certified nuclear test engineer and a certified NRC inspector. Mr. Myers has twenty years of nuclear-related experience balanced between line and oversight positions. These positions involved responsibility for the line implementation of industry regulations and responsibility for the oversight of regulated operating activities. As an independent regulatory and technical advisor, he served the NRC in the assessment of inspection related corrective actions at several reactor sites. Mr Myers evaluated the technical adequacy of electrical, mechanical, and I&C modifications to safety-related systems. In addition, he served as the subject matter expert in the areas of conduct of operations and operating procedures for the restart of operating activities at RFO in 1995. The restart was conducted in accordance with DOE Order 5480.31 and closely monitored by the DNFSB. Mr. Myers has conducted seminars on conduct of operations for prospective Tiger Team members. As a senior operations program consultant, he performed a mentoring function to the managers of licensing and QA at a commercial BWR. He interfaced with and resolved NRC pre- and post-reactor startup concerns and issues. He provided a day-to-day assistance in the implementation of regulations to operations and I&C departments. He also provided leadership in the development of the performance-based quality surveillance program. Mr. Myers served as NRC senior resident and resident inspector where he performed detailed assessments of operating activities at several commercial reactors. In addition, he was a nuclear shift test and chief test engineer. He conducted naval nuclear propulsion plant overhaul activities within the bounds of rigid conduct of operations requirements and in the midst of profit driven production programs.

George Napuda

Mr. George Napuda has over 30 years experience in commercial and naval nuclear power, vendor control, and manufacturing. He is a graduate of Picatinny Arsenal Toolmaker School and attended Franklin and Marshall College and Fairleigh Dickinson University. He holds Journeyman Certification from the Department of Army and Federal Committee on Apprenticeship, a B.A. degree, in Liberal Arts and Science and an M.A. degree, in Industrial Psychology. He has held certifications, based on formal examinations, in eddy current, magnetic particle, liquid penetrant, radiographic, ultrasonic, and visual nondestructive testing techniques; statistical quality control, metrology, and vendor evaluation; and management oversight, performance evaluation, and severe accident overview. He has also earned a number of other certifications by examination including Pressurized Water Reactor Facilities and Regional Inspector (Nuclear Regulatory Commission (NRC)); Lead Auditor (utility); and Oxygen Breathing Apparatus (Department of Interior). He has participated in comprehensive management, program, and performance assessments for almost two decades both as a team member and a team leader. He has successfully completed a number of international assignments, presented technical presentations at professional conferences, and presented adult technical training courses. Examples of areas in which he was instrumental in effecting industry performance improvements include design, procurement, material management, quality assurance, and quality control programs; corrective action methodology; root cause analysis; and maintenance, training, and manufacturing processes. He has presented technical papers at international, national, and regional levels. He has given formal training sessions and "field" training to the Department of Energy, the NRC, and utility technical and professional staff. His career has included positions with private industry, Department of Defense, and NRC. He is now serving as a consultant to the Department of Energy, NRC, and the domestic and international nuclear power industries.

Frank S. Poppell

Mr. Poppell received a B.S. degree, in Nuclear Engineering, from the Georgia Institute of Technology and has eighteen years in the nuclear field. He has three years experience at the DOE Rocky Flats and Savannah River facilities performing safety evaluations, assisting with the resolution of DOE issues for restart of K-Reactor, evaluating Department of Energy (DOE) oversight concerns (Operational Readiness, Tiger Team, and Defense Nuclear Facility Safety Board Reviews) for incorporation into waste management facility startup documents, and performing DOE Order compliance assessments. He has eleven years experience in the commercial nuclear industry primarily in the areas of Licensing/Regulatory Compliance, Reactor Engineering, and Operations as a Shift Technical Advisor. His commercial nuclear power experience includes coordinating resolution of Nuclear Regulatory Commission issues, providing Operations oversight for Technical Specification operability and reportability determinations, directing control rod movements and power maneuvers, and preparing/reviewing Unreviewed Safety Question evaluations. He also has four years nuclear experience at Charleston Naval Shipyard as a Shift Test Engineer coordinating reactor plant testing on submarines during overhaul and refueling.

Richard L. Renne

Mr. Renne received a M.S. of Public Health Degree in Health Physics, Medical Physics, and Environmental Health from the University of Minnesota. He has 25 years of experience in operational health physics, medical radiology, environmental health in governmental, private, and institutional operations. He has served in international operations as technical liaison to the Federal Republic of Germany, the Republic of South Korea, and the British Ministry of Defense. He has served as consultant/radiological advisor to Salem and Cooper nuclear power facilities, Professor and Chairman of the Department of Radiological Sciences, University of Tennessee Center for Health Sciences, Radiation Manager at Pantex, Fernald, and Rocky Flats, Chief Health Physicist for the US Army Missile Command, and Radiation Specialist for the 4th Naval district as an Officer in the United Stated Navy. Mr. Renne has operational experience in radiological devices and applications including medicine, operational health physics, lasers, electro-magnetic pulse technology, and nuclear weapons. He has served as consultant to numerous private enterprise companies in association with new product development and marketing techniques. Mr. Renne has been an instructor, evaluator, and assessor for Conduct of Operations implementation at various locations. He received his initial NRC assessment training as a health physicist employed with an agreement state for nuclear licensing, inspection, and evaluation. Mr. Renne has qualified as an NRC licence manager for medical and operational sources. He started his career by obtaining National Certification from the American Registry of Radiologic Technology for medical uses of radiation and radiation producing devices.

Charles H. Robinson

Mr. Robinson has B.S. degree in Chemical Engineering from the University of Massachusetts and has completed graduate course work toward a M.S. Degree in Nuclear Engineering at the University of Lowell. He has seven years experience in nuclear criticality safety. Prior to contracting with the Department of Energy through Enercorp Federal Services Corporation in 1995, he was employed as a Nuclear Criticality Safety Engineer by Babcock & Wilcox, Naval Nuclear Fuels Division, in Lynchburg, Virginia. While at Babcock & Wilcox, he performed criticality safety analyses; served as a certified quality assurance reviewer of analyses; reviewed and approved procedures; and conducted audits, assessments, and investigations. Prior to Babcock & Wilcox, he was employed by the U. S. Nuclear Regulatory Commission (NRC) as a Nuclear Process Engineer and Chemical Engineer, and was certified as an NRC Incident Investigator. While at the NRC, he performed various licensing and inspection activities for licensed nuclear fuel cycle facilities, including reviewing and approving license amendments; performing independent criticality safety analyses; and conducting operational team assessments, augmented inspections, and root-cause investigations. His assessment/inspection/restart experience, as a team member, at facilities includes Allied Chemical, Babcock & Wilcox, Combustion Engineering, General Electric, Nuclear Fuel Services, Sequoyah Fuels, Siemens, and Westinghouse, and involves commercial fuel production, naval nuclear fuel production, uranium hexafluoride production, uranium recovery, and waste treatment.

Thomas Rogers

Mr. Rogers received a B.S. degree in Nuclear Engineering from the Georgia Institute of Technology and has seventeen years experience in the nuclear field. He has over four years experience at Department of Energy (DOE) facilities working for DOE's Office of Nuclear Safety where he performed assessments at the Princeton Tokamak and the Los Alamos TA-55 Plutonium Facility. He served as an Operational Readiness Review team member for Westinghouse Savannah River Company at the Savannah River K-Reactor and In-tank Precipitation Facility. He has eight years experience in the commercial nuclear industry where he participated in numerous performance-based assessments including conduct of operations assessments, emergency operating procedure assessments, safety system functional inspections, and quality assurance audits. He also participated in restart efforts at the Sequoyah, Indian Point 3, North Anna, and Rancho Seco nuclear power stations. Additional commercial nuclear power experience includes over three years with the Nuclear Regulatory Commission where he served as an operator-licensing examiner for pressurized water reactors. He has five years experience at a naval shipyard as a nuclear shift test engineer on fast attack submarine and cruiser reactor plants.

Mark A. Sundie

Mr. Sundie has a B.S. degree in Nuclear Engineering from the Pennsylvania State University and has over 15 years experience in the nuclear field. Prior to joining the Department of Energy (DOE) in late 1989, he was employed by the Tennessee Valley Authority (TVA) for ten years, where he was assigned to the Bellefonte Nuclear Plant in Scottsboro, Alabama, as a Systems Engineer and Reactor Engineer. While at Bellefonte, he completed the training programs for Shift Technical Advisor and Station Nuclear Engineer. He also spent five years at the Sequoyah Nuclear Plant in Soddy-Daisy, Tennessee, where his duties included nuclear engineering, reactor core surveillance, Restart Test Director, and Refueling Test Director. Mr. Sundie joined DOE in late 1989 at the Savannah River (SR) Operations Office under the Assistant Manager for Defense Programs, Separations Division. His first assignment was as a Facility Representative for FB-Line, 247F, and 235F facilities. He served in this position for three years. In his next assignment as Program Engineer for Separations F-Canyon programs and Division Training Liaison, Mr. Sundie participated in the Order Compliance reviews for HB-Line, FB-Line and F-Canyon and completed all the necessary division requirements for subject matter expert in the area of Training and Qualification programs. His restart experience consists of roles as a team member in the HB-Line, FB-Line, and 247F Operational Readiness Reviews. Most recently, he served as the DOE-SR Team Leader for both the F-Canyon and FB-Line Restart efforts, where he supervised eighteen subject matter experts from the DOE-SR staff and validated the contractor's state of readiness prior to commencement of the independent Operational Readiness Review. Mr. Sundie came to the Y-12 Site office in February 1995, where he currently serves as the Technical Support Team Leader.

Thomas S. Tison

Mr. Tison received a B.S. degree, in Aerospace Engineering from Virginia Polytechnic Institute and a MBA, in Research and Development from Florida State University. He also completed courses of study at the U.S. Air Force (USAF) Squadron Officer's School and Air Command and Staff College. Mr. Tison has 15 years experience with the Department of Energy (DOE). Prior to his position as Restart Team Manager, he served as Site Manager for the DOE K-25 Site Office. He provided direction to the Management and Operations contractor with a work force of 1800 employees. The primary focus of the K-25 Site is environmental restoration and waste management activities. Mr. Tison was responsible for ensuring that effective programs were established and maintained by the contractor for environmental, safety, and health permitting and compliance with national programs, such as the Clean Air Act; Clean Water Act; Resource Conservation and Recovery Act; OSHA; and Nuclear Safety. Mr. Tison was also responsible for the safe, compliant, efficient operation of the Toxic Control Substance Act incinerator. He supervised fifteen federal employees and provided direction to eleven contractor employees. Previous to his work at K-25, Mr. Tison served in positions ranging from Program/Project Engineer to Program Management Branch Chief at the DOE Y-12 Site Office. He was involved in the design and construction of numerous capital construction projects and was responsible for establishing and implementing project management policy and guidelines. Before joining DOE, Mr. Tison performed work for the Clinch River Breeder Reactor. He also served 10 years in the USAF as a program control officer, configuration manager, and structural engineer.

Kirk W. Van Dyne

Mr. Van Dyne has over 15 years of nuclear regulatory experience in the U.S. Navy nuclear propulsion program, commercial nuclear power program, and Department of Energy (DOE) facilities. He has a broad technical background in the areas of operations, licensing/regulatory compliance, inspection, and oversight. Mr Van Dyne received a B.S. degree, in Civil Engineering Technology from Virginia Polytechnic Institute and State University. Prior to his involvement in the assessment of resumption activities at Y-12, Mr. Van Dyne consulted to the Nuclear Regulatory Commission (NRC) at Tennessee Valley Authority (TVA) Watts Bar nuclear facility. In this capacity, he augmented NRC inspection resources to determine TVA's readiness for receipt of an operating license. Mr. Van Dyne consulted to Westinghouse Savannah River Company (WSRC) and participated in the development and implementation of the Systematic Evaluation Program (SEP). He contributed a commercial nuclear regulatory perspective to this evaluation program. Prior to the SEP, his efforts were focused on the resolution of issues relating to the K-Reactor restart as well as the development and implementation of the post-restart issue management system. For three years, Mr. Van Dyne assisted in the restart and startup of troubled commercial nuclear plants, including Comanche Peak and Turkey Point. During these periods Comanche Peak received an operating license and Turkey Point was removed from the NRC's list of Category "3" plants. Mr. Van Dyne was also employed by the NRC where he held various positions, including that of Resident Inspector. He received advanced training in both pressurized water and boiling water reactor technologies. While employed by the U.S. Navy, Mr. Van Dyne served as a Shift Test and Chief Test Engineer at Norfolk Naval Shipyard. His responsibilities included the planning, supervision, and review of plant condition changes and post maintenance testing in support of the overhaul of S5W and S6G submarine reactor plants.

Gary F. Weston

Mr. Weston received a B.S. of Engineering degree in Marine Engineering, from the State University of New York Maritime College and has over 25 years experience in various engineering positions and assignments. Prior to joining the Y-12 Restart Team, he was employed by Stone and Webster Engineering Corporation where he served in positions as project manager for outage modifications, project design manager, certified lead auditor, lead startup engineer, consultant for events analysis and system operations assessments, design baseline verification program manager, and construction completion planning supervisor for various nuclear utilities. During this period of employment, he spent two years with the Institute of Nuclear Power Operations as a program manager in the Events and Analysis Division, which was responsible for plant operations assessments and event analysis. Prior to these assignments, he was employed by EDS Nuclear as superintendent of mechanical quality engineering for a nuclear construction project, by LPL for both field engineering and startup and test engineering positions and by Newport News Shipbuilding as a nuclear construction supervisor for overhaul and refueling of S5W plants. Previous to these nuclear assignments, he served in 2nd and 3rd assistant engineering positions aboard various US merchant vessels.

Michael Klanecky

Mr. Klanecky received a B.S. degree of Management/Industrial Psychology from Regis University, an A.S. in Mathematics and has over 15 years experience within the DOE complex in various quality assurance and nuclear facility conduct of operations assignments. At Rocky Flats, Mr. Klanecky was directly involved in the restart activities of Building 559, supporting Operations and Quality Assurance management functions. He performed numerous assessments of Plutonium Operations/Conduct of Operations and analytical laboratory management responsibilities in Building 559 following resumption of laboratory operations. In supporting management, he assisted in configuring the path of cultural change associated with implementing Conduct of Operations. As a support service contractor to the Department of Energy, Mr. Klanecky has accomplished numerous in depth QA assessments of contractor administrative and operations programs. Gaining several certifications in the audit function, Mr. Klanecky has developed and lead assessments and readiness reviews of special operations involved with the Rocky Flats Thermal Stabilization Program, i.e., consolidate and place in a safe configuration plutonium oxide waste, residue, and metal. In addition, he developed and coordinated readiness reviews for the limited restart of nuclear facilities as well as the decommissioning of non-essential weapons production facilities. Other areas of lead assessor responsibility include, the quality assurance evaluation of Rocky Flats Safety Program (OSRs, CSOLs, and nuclear criticality safety), facility engineering QA, software development QA and environmental QA and regulatory compliance (i.e., RCRA, Waste Management, and Underground Storage Tanks). Mr. Klanecky supports Y-12 Site Office Program Management and Environmental Safety and Health branches by performing QA and Conduct of Operations related evaluations associated with on-going Y-12 Plant and nuclear facility restart activities.

7.2 YSORT Findings

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3000.01	USQD No. 95-CAASX4, Rev. 0 for procedures Y50-53-SO-031 and Y50 53-SO-005 was not properly performed.	SE	4	x	
3001.01	All key personnel and supervisors and support personnel required to resume safe operations have not been identified by category.	TQ	18	x	
3002.01	Evidence file C303ME does not provide evidence that technicians meet the one year job related experience required of a technician.	TQ	14	x	
3002.02	Evidence File C303DS does not document an evaluation of JD Moeretz for minimum education and experience requirements as a supervisor.	TQ	14	x	
3002.03	Fire Department personnel have not been categorized under 5480.20 and evaluation against minimum education experience requirements.	TQ	14	x	
3002.04	Plant Shift Superintendent personnel have not been categorized under 5480.20 and evaluated against minimum education and experience requirements.	TQ	14	x	
3004.01	Pre-and Post-restart Findings and Observations generated form the DOE and LMES assessments of RSS and DUO were not evaluated to determine their impact or significance towards D&A to ensure that the deficiencies were corrected or non-existent within D&A.	MG	25	x	
3004.02	The evidence files do not contain findings or deficiencies which were generated after May 2, 1995 to show their review by the IMPRB in terms of their D&A applicability nor their pre/post restart significance.	MG	25	x	
3004.03	The conclusion that post-restart RSS findings are post-restart for D&A is not supported by conclusive evidence and no indication is provided to show the process which was performed to provide this conclusion especially for deficiencies from RSS and DUO.	MG	25	x	
3005.01	LMES Finding MG-07 from LMES MSA RSS was not reviewed or taken into consideration during D&A Resumption Activities. MG-07 must be resolved prior to D&A resumption. Once all operations are restarted, this finding will have no basis for resolution.	MG	25	x	
3006.01	Procedure Y50-53-SO-005 job aids were deficient. (Rev. 1)	SE	10, 12		x
3006.02	Alarm horns were deficient. (Rev. 1)	SE	10, 12		x
3008.01	The D&A evidence files do not provide documentation of the minimum staffing requirements established by the 9204-2/2E OSR for the PSS.	TQ	18	x	
3008.02	The D&A evidence files do not provide documentation of the minimum staffing requirements established by the 9204-2/2E OSR.	TQ	18	x	
3008.03	The D&A evidence files do not provide documentation of the minimum staffing requirements established by the 9204-2/2E OSR.	TQ	18	x	
3008.04	The D&A evidence files do not provide documentation of the minimum staffing requirements established by the 9204-2/2E OSR.	TQ	18	x	

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3009.01	Operations Procedure Y20-NM-303 cannot be performed as written. Operators demonstrated a lack of familiarity and use of this specific procedure. The quality of the specific procedure training defined in the TMS for Module 07451 could not be verified.	OP	19	x	
3010.01	Inadequate evidence file documentation of the status of conduct of operations implementation program for Beta 2E Quality Organization associated with D&A resumption. Evidence File C601Q does not meet CO-19 nor the criteria of evidence file C601Q.	OP	19	x	
3010.02	Inadequate evidence file documentation of implementation of a compensatory measure program required by RFA-160 by the Quality Organization for restart of the D&A mission area. Evidence file C603Q does not meet the closure criteria.	OP	19	x	
3011.01	Building 9204-2E assembly area bridge crane hoisting evolutions that require component lifts which utilize crane mounted vacuum pumps do not maintain required vacuum to ensure safety during lift operations.	OP	19	x	
3012.01	Rigor and formality in the use of Operations Standing Orders as required by Chapter XV of the Conduct of Operations Manual needs to be improved.	OP	19	x	
3013.01	Daily administrative checks that are currently performed on the CAAS and SNM control are incorrectly exempted form the requirements of Conduct of Operations Chapter II in 9204-2E operations.	OP	19	x	
3013.02	YSORT observation of performance of separate DAC of SNM area in two 9204-2E areas were found inadequate in meeting requirements for performing hands-on verification of TID seals.	OP	19	x	
3014.01	Lack of any support organization mentoring program description that defines the support organization current mentoring activities being performed for conduct of operations implementation of DOE Order 5480.19.	OP	19		x
3016.01	The Internal Dosimetry Program is presently operating without current technical procedures or evidence of qualified personnel. Procedure Y10 102 does not authorize the suspension or rescission of procedures by management, other than that described therin.	MG	20, 19		x
3021.01	Rigor and formality in maintaining system status files needs improvement based on the limited assessment of the file. LMES needs to improve the quality of the file and comply with the intent of Chapter VIII requirements.	OP	19	x	
3021.02	The current system configuration drawings for the Beta 2 and 2E Fire Protection Systems are inadequate for operations perspectives. Full system P&IDs and electrical drawings for the Fire Protection System need to be developed and issued.	OP	19	x	

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3021.03	There is no required controlled issue of and distribution of system status file configuration drawings, P&IDs, Single line and schematic drawings to the Nuclear Facility Operation Managers to assure that the latest drawing revision is maintained.	OP	19	x	
3022.01	Drill Program has not been effectively implemented.	OP	22		x
3022.02	The level of knowledge of the drill participants radiation control skills was not challenged and the evolution was not a learning experience.	OP	22		x
3023.01	Co-signers of the MOUs contained in CSA-160 do not have an official listing of key management/operations personnel in the Nuclear Facilities which are part of Nuclear Operations.	MG	24		x
3023.02	Facility specific conduct of operations training or briefings need to be developed and offered to support organizations (PSS, Fire Department, RadCon, and Quality to allow individuals first hand information on the requirements of the COO manual and MOUs.	MG	24		x
3026.01	The method of controlling procedures for use in B2E has not been effective in ensuring that the current version of procedures is in use.	PR	7	x	
3026.02	Beta 2E is not using working copies of procedures as described in Y10-189, "Document Control."	PR	7	x	
3026.03	The Plant Procedures Group (as the Releasing Organization) is not marking distributed procedures as Controlled Copies as required by Procedure Y10-189.	PR	7		x
3026.04	The reading room in Beta 2E should be treated as a Document Management Center and as such should comply with the requirements of Procedure Y10-189.	PR	7	x	
3027.01	Per procedures, LMES does not meet required schedules for submittals of revised RFCs and RFAs after rejection of original submittals by DOE.	MG	27		x
3028.01	Evidence indicating all compensatory measures applicable to D&A are effectively implemented is unavailable.	MG	27		x
3030.01	Personnel on the D&A resumption crew from the Fire Department, PSS, NCSD, and DSO are deficient in their Energy Systems Training Requirements and/or their Unescorted Access the Y-12 MAAs training requirements.	TQ	13	x	
3031.01	DSO Procedures required for D&A activities that have not been upgraded using the increased rigor that has been applied since 9/1/95 in performing Verification and Validation should be upgraded to this standard prior to use.	PR	7		x
3031.02	The development and technical review stages of the procedure process need strengthening in order to relieve the burden experienced during verification and validation.	PR	7		x

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3031.03	The current process being used for identification of CSA requirements to be incorporated into procedures is an undocumented process. The process needs to be proceduralized and reviewed to ensure that requirements are considered and process is followed.	PR	7		x
3035.01	The PSS and Fire Department Personnel perform duties that are governed by DOE Order 5480.20/20A but they are not included in the Y 12 TIM.	TQ	13		x
3035.02	PSS and Fire Department training requirements for D&A resumption have not been identified.	TQ	13	x	
3035.03	TMS identifies nine DSO personnel on the D&A resumption crew as deficient in completing their qualification cards.	TQ	13	x	
3035.04	FMO have not completed any of their qualification cards.	TQ	13		x
3036.01	The Required Posting Log Sheets for Beta 2E were incomplete. Approval signatures and procedural references were missing.	OP	19	x	
3036.02	Quality Organization operator aids are not integrated into the D&A program.	OP	19	x	
3036.03	The MOU requires QO to review D&A Standing Orders and operator aids (as applicable), and Required Reading information. There is no evidence to show this requirement is being consistently met.	OP	19	x	
3037.01	Evidence file deficiencies in C10.03, C10.02, and C10.01.	MG	25	x	
3037.02	A memo contained in C10.03 states that it was inappropriate to include finding I20865 in the review because it was coded as Management Commitment. No where in the criteria does it state, nor was it accepted by DOE in the POA development.	MG	25	x	
3037.03	Numerous deficiencies identified by DOE and LMES during assessments of RSS and DUO and Special Operation Packages containing findings were not included on the list of assessments to be evaluated for pre/post D&A significance.	MG	25	x	
3037.04	Only one finding from Source S2069 was evaluated for corrective action adequacy. C10.02 evidence file is extremely deficient since review was not performed on corrective actions taken to close findings and did not include actions to close CSA infractions.	MG	25	x	
3037.05	Numerous findings status as closed in C10.03A were noted as having unsatisfactory corrective action in C10.02. No information is presented to indicate what actions will be taken to reopen these findings and correct the unsatisfactory status.	MG	25		x
3037.06	Numerous pre-restart findings identified in C10.03A were not closed but are in the process of being resolved.	MG	25	x	

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3037.07	Evidence File C10.02 performs and evaluation on the adequacy of action taken. The evaluation performed and documented in C10.02 was not performed on the actions taken to resolve the pre-restart findings when issues were not closable to support D&A.	MG	25	x	
3037.08	At the time of this evaluation, not all the pre-restart issued identified in C10.03A were closed or resolved as stated in the text of the file.	MG	25	x	
3039.01	A significant number of D&A procedures are under revision that will require additional training prior to D&A resumption.	TQ	16	x	
3045.01	Procedures do not always include those controls and limits significant to the nuclear criticality safety of the operation, and do not always specify all parameters they are intended to control.	SE	4	x	
3045.02	No objectives or criteria exist for NCSD to provide technical guidance in the development of operating procedures or in the improvement of criticality safety practices and procedural requirements.	SE	4	x	
3045.03	Supervisor/worker participation in the review of CSAs and the incorporation of CSA requirements into procedures is evident	SE	4	x	
3046.01	LMES does not have personnel assigned to continuing training programs in TMS after initial qualification.	TQ	13		x
3049.01	LMES has not submitted a Conduct of Operations applicability matrix for Disassembly and Assembly Operations Facilities for approval by the DOE Y-12 Site Office as required by DOE Order 5480.19.	OP	19	x	
3050.01	Controls established by NCSD, PSS, and the Fire Department to ensure only trained and qualified personnel are assigned to work are ineffective.	TQ	14	x	
3051.01	The timely recognition and prompt corrective action to Conduct of Operations issues by some floor level supervisors in normal operations activities need improvement in 9204-2E.	OP	19	x	
3056.01	Operator Aid OA-9204-2E-95-47 instructions to personnel were relative to RadCon controls and by definition invoked the memorandum of understanding between Building 9204-2E and the RadCon organization and proper posting requirements.	MG	20		x
3059.01	Equipment Lockout/Tagout Program is not always being effectively implemented in Beta 2E by support organizations.	OP	19		x
3060.01	LMES has not completed an analysis of all Y-12 positions to determine if they are governed by DOE Order 5480.20A.	TQ	13		x
3060.02	The PSS and Fire Department have not upgraded their training programs to meet the requirements of DOE Order 5480.20A.	TQ	13		x
3064.01	Numerous findings indicate a Y-12 site-wide programmatic weakness in the USQD process.	SE	4		x

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	post-Restart
3066.01	Procedure ESPS-FO-006 needs to be revised to provide correct instructions for the performance of the surveillance and to address partial performance of the procedure.	PR	7	x	
3066.02	Sitewide guidance on the performance of surveillance procedures on safety significant systems is lacking in that no guidance is provided on whether or not portions of procedures may be performed and what decision process should be used.	PR	7		x
3067.01	Inadequate justification for CAAS detector setpoint changes.	SE	4, 11		x
3067.02	USQD screen for CAAS detector setpoint changes was not properly performed.	SE	4		x
3068.01	Quality Organization procedures that have not been revises since 4/1/95 should not be used for operating activities until they have been upgraded in accordance with Y10-102.	PR	7	x	
3068.02	Quality Organization documents (such as those observed near the Mauser) that are used to supplement or complement operating procedures should be subjected to the same review and approval process as the procedures.	PR	7	x	
3069.01	The PSS does not have division Training Office/Manager to manage training related issues.	TQ	14		x
3072.01	Deficiencies identified by DOE/YSORT from the evaluation and assessment of D&A readiness to resume operations have not been evaluated for generic implications. These deficiencies should be evaluated for applicability within D&A operational boundaries.	MG	25	x	
3072.02	Deficiencies identified from DOE/YSORT, LMES and DOE IRA teams should be evaluated for generic applicability at the site level as required by QA-16.1.	MG	25		x
3074.01	Section VI.A.1. does not contain the requirement to immediately notify the PSS upon detection that any listed Sprinkler System is not operable.	SE	4		x
3075.01	No procedure or other document demonstrate that the operability of the Walk-in-hood, including the relative accuracy of the Air Flow Gauge, was accomplished during the quarterly survey.	ST	28		x
3077.01	The QO engineers Koerner and Waldrop do not have signed qualification cards on file.	TQ	18		x
3077.02	The following DSO files did not have signed qualification cards on file: Wasilko, Reis, Linson, and Hunnicutt.	TQ	18		x
3077.03	There is no education and experience history on file for R. Roosa, Nuclear Operations Manager.	TQ	18		x
3077.04	There is no D&A comprehensive oral examination on file for DSO personnel Howard and Scott.	TQ	18		x

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3077.05	There is no D&A comprehensive written examination of file for DSO cleaner Scott.	TQ	18		x
3077.06	The education waivers on file for DSO personnel Hunnicutt and Thomas are not appropriate.	TQ	18		x
3077.07	None of the PSS records reviewed had education or experience histories, training exception approvals, medical information, or qualification cards.	TQ	18	x	
3077.08	The following FMO personnel records included training exceptions but the approved exception approval forms were not on file: Ellis, Freshour, Lewis, King, Campbell, Barnes, Bryant, Beeler, McDonald, and Rowell.	TQ	18		x
3077.09	The following FMO files had no education or experience histories and no documented review that they meet DOE Order minimum education experience requirements: Ellis, Grizzle, Gerth, King, Campbell, Barnes, Beeler, Anderson, and Pride.	TQ	18		x
3077.10	None of the FMO files had signed qualification cards to document their task qualifications for D&A.	TQ	18	x	
3077.11	Minimum staffing requirements are not supported by the training record files for the PSS, FMO, and the Fire Department.	TQ	18	x	
3087.01	9204-2E assembly are bridge crane hoisting evolutions that require component lifts which utilize crane mounted vacuum pumps do not maintain required vacuum to ensure safety during lift operations.	OP	19		x
3096.01	A Fire Protection System air compressor electrical breaker was observed in an energized position in Building 9204-2E disassembly area adjacent to the walk-in-hood.	OP	19	x	
3096.02	Fire Protection Operations Department has not effectively implemented the requirements of Conduct of Operations Manual Chapters IX or Chapter II, nor has informed facility Operations of the status of the Fire Protection System.	OP	19		x
3096.03	Equipment tagging for the Fire Protection valve station next to the walk-in-hood area of 9204-2E disassembly area was found deficient for compliance to Conduct of Operations Manual Chapter XVIII equipment labeling requirements.	OP	19		x
3098.01	No guidance exists for NCSD to provide technical assistance in the methods of implementing criticality safety requirements into operating procedures or in the improvement of criticality safety practices and procedural requirements.	SE	4		x
3099.01	No guidance exists in the procedures development program on the methods for implementing criticality safety requirements identified in the technical procedures.	SE	4		x

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3102.01	The timely recognition and prompt corrective action to Conduct of Operations issues by some floor level supervisors in normal operations activities need improvement in 9204-2E.	OP	19		x
3108.01	Fire Protection Operations was found to have locked electrical equipment breaker/disconnects and locked areas of operations facilities in non compliance with Administrative Control Tagging Lockout/Tagout program requirements.	OP	19		x
3109.01	All Fire Department personnel identified on the D&A resumption crew have not completed required training.	TQ	13		x
3110.01	Contrary to the requirements of LMES Procedure QA-16.1, deficiencies are statused as "closed" in ESAMS prior to completion of the corrective action or the independent verification as required by QA-16.1	ST	30		x

Totals	
YSORT Findings	102
Pre-Restart	55
Post-Restart	47

7.3 Lessons Learned

YSORT evaluated its activities during the D&A assessment process and identified the following lessons learned. These should be applied to future YSO/YSORT assessments in an effort to improve upon the process.

1. YSORT's assessment of the LMES MSA and RA (CO-30) should be assigned to the Resumption Area Lead since this person is coordinating the effort and, therefore, is more knowledgeable of the overall progress and performance of LMES' assessments. Furthermore, a line item for each Functional Area Lead should be incorporated into the assessment plan to accommodate furnishing applicable information to the Resumption Area Lead. From this information, a "roll-up" of the assessment issues could be developed.

2. In the D&A assessment plan, every CO includes a line item concerning the resolution of previous findings germane to that CO. Similar to the above lesson learned, the "roll-up" should be developed by the Management Functional Area Lead as part of CO-25. Again, the other Functional Area Leads will need a line item in the assessment plan to accommodate this effort.

3. Several issues should be clarified in future POAs including: 1) the scope and intent of CO-28 concerning the startup test program; 2) the identification of personnel required for resumption and the scope of training requirements for these personnel, specifically for the support organizations; and 3) expectations and requirements of procedure development (e.g., inclusion of CSA limits and conditions in procedures).

4. For several YSORT pre-restart findings, LMES developed corrective action plans, which had post-restart actions, and were accepted by YSORT. In order to close out the pre-restart finding, a post-restart finding had to be generated. If there are obvious pre- and post- corrective actions required for resolution of the issue, process both pre- and post-findings concurrently.

5. The parallel process established to perform formal and informal V&Vs worked fairly well; however, it is necessary to obtain a letter from LMES to provide expectations for this process, including the frequency of formal correspondence (i.e., bi-weekly, weekly, and then daily submittals).

6. The management of the closures of findings was significantly complicated by LMES breaking one finding into more than one part (i.e., ESAMS ID number) if the finding involved more that one organization or had actions with different scheduled completion dates. In future assessments, LMES should be required to submit one corrective action plan and/or closure package for each finding at which point YSORT would perform their validation/verification. LMES' verbal agreement with the YSORT counterpart on the proposed or completed corrective actions should be acceptable; however, YSORT should not manage these parts since the issue is not completely addressed.

7.4 References

1. DOE "Y-12 Site Office Restart Team Assessment Plan for Disassembly and Assembly Resumption," October 19, 1995.

2. DOE Y-12 Site Office Operating Procedure YSO-5.4.1, "Restart Team Assessments," April 14, 1995.

3. DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," May 18, 1992.

4. DOE Order 5480.20, "Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities," June 19, 1991.

5. DOE Order 5480.21, "Unreviewed Safety Questions," December 24, 1991.

6. DOE Order 5480.24, "Nuclear Criticality Safety," August 12, 1992.

7. DOE Order 5480.31, "Startup and Restart of Nuclear Facilities," January 8, 1996.

8. Lockheed Martin Energy Systems, Inc., Y-12 Plant, Document Y/OA-6238, "Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," Revision 2, January 4, 1996.

9. Lockheed Martin Energy Systems, Inc., Y-12 Plant, Document Y/OA-6248, "Management Self-Assessment Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant," January 4, 1996.

10. Lockheed Martin Energy Systems, Inc., Oak Ridge Y-12 Plant Command Media, Procedure Y10-190, "New Start-up Requirements," January 2, 1996.

11. Martin Marietta Energy Systems, Inc., Y-12, "Nuclear Operations Conduct of Operations Manual," 1995.

12. Martin Marietta Energy Systems, Inc., Y-12 Plant Quality Assurance Program Policy and Procedures, Y60-160, "Corrective Action Program," January 23, 1995.

13. Martin Marietta Energy Systems, Inc., Y-12 Plant Procedures, Administrative 10 Series, Vol.4, Y10-189, "Document Control," April 25, 1995.

14. Martin Marietta Energy Systems, Inc., Y/AD-627, "Mentor Program Description for Y-12 Resumption," January 12, 1996.

15. Martin Marietta Energy Systems, Inc., Y-12 Plant, Y/AD-623, "Plan for Continuing and Resuming Operations," October 1994.

16. Martin Marietta Energy Systems, Inc., Y-12 Plant Procedures, Y10-111, "Required Reading," Rev. 1, September 1, 1992.

17. Martin Marietta Energy Systems, Inc., Y-12 Plant Quality Assurance Procedures, Y60-164, "Lessons Learned," June 30, 1992.

18. Martin Marietta Energy Systems, Inc., Y-12 Plant Procedures, Administrative 10 Series, Vol. 3, Y10-102, "Operating Procedure Development, Revision, and Control," September 1, 1995.

19. Martin Marietta Energy Systems, Inc., Procedure, QA-16.1, Rev. 1, "Corrective Action Program," June 1994.

20. Martin Marietta Energy Systems, Inc., Health and Safety Procedures, 70 Series, Vol. 1, Y70-027, "Safety, Health, and Environmental Suggestions, and Complaints," August 8, 1988.

21. Request for Approval, Request No. LMES/Y-12-DOE-4330.4A-CSA-2B, "Implementation of Maintenance Requirements in the Field," October 30, 1995.

22. Request for Approval, Request No. LMES/Y-12-DOE-5480.7A-CSA-40C, "Testing of Fire Protection Systems," May 25, 1995.

23. Request for Approval, Request No. MMES/Y-12-DOE-5480.7A-CSA-47B, Special Hazard Protection," April 13, 1995.

24. Request for Approval, Request No. MMES/Y-12-DOE-5480.19-CSA-160B, "Conduct of Operation Implementation Deficiencies," February 7, 1996.

United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

96/1570

DATE: February 25, 1996

REPLY TO ATTN OF: DP-81:Spence

SUBJECT: **REQUEST FOR COMMENCEMENT OF THE READINESS ASSESSMENT FOR DISASSEMBLY AND ASSEMBLY ACTIVITIES AT THE Y-12 PLANT**

TO: Robert W. Poe, Assistant Manager for Environment, Safety, and Quality, SE-30, ORO

In accordance with the requirements of Department of Energy (DOE) Order 5480.31, "Startup and Restart of Nuclear Facilities," Lockheed Martin Energy Systems, Inc., has declared its readiness to proceed with operations of the Disassembly and Assembly activities. The DOE Y-12 Site Office has validated this declaration and has requested the DOE Readiness Assessment (RA) to begin on February 26, 1996. You are authorized to begin the DOE RA as requested.

Questions may be directed to Bob Spence at 6-0755.

James C. Hall
Manager

cc:
R. R. Nelson, DP-80, ORO
R. J. Spence, DP-81, ORO
T. S. Tison, DP-811, ORO

DOE F 1325.8A
(4-89)

96/1570

United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: March 15, 1996

REPLY TO ATTN OF: SE-33:Rothrock

SUBJECT: FINAL REPORT FOR THE READINESS ASSESSMENT FOR DISASSEMBLY/ASSEMBLY ACTIVITIES AT THE OAK RIDGE Y-12 PLANT

TO: James C. Hall, Manager, M-1
Thur: Robert W. Poe, Assistant Manager for Environment, Safety, and Quality, SE-30

At your direction the Y-12 Disassembly/Assembly Readiness Assessment (RA) was conducted during February 26 through March 7, 1996. It is the conclusion of the RA Team that Disassembly/Assembly operations can be safely started upon the completion of corrective actions for the pre-start LMES and DOE findings outlined in the attached final report. There has been no change in the key issues since the outbrief on March 7, 1996.

I recommend that the Y-12 Site Office (YSO) be responsible for closure of the LMES pre-start findings and that the Office of the AMESQ be responsible for closure of the DOE pre-start findings. The YSO should also be able to approve the corrective action plans for all the post-start findings in accordance with the Department of Energy Operational Readiness Review standard DOE-STD-3006-93.

If you have any questions or require further assistance, please contact me at (423) 576-0830.

John D. Rothrock

John D. Rothrock, Team Leader
Y-12 Disassembly/Assembly
Readiness Assessment Team

Attachment

cc w/attachment:
See Page 2

cc w/attachment:
S. Richardson, M-2
D. Rhoades, DP-24 (3)
B. Spence, DP-81, Y-12
R. Nelson, DP-80
T. Tison, YSORT
F. Gustavson, LMES (5)
R. Lagdon, EH-11
D. Knuth, DP-30
W. Andrews, DNFSB
Team Members

cc w/o attachment:
X. Ascanio, DP-31
W.F. Hensley, DP-31
J. King, DP-311

READINESS ASSESSMENT FOR DISASSEMBLY/ASSEMBLY ACTIVITIES AT THE OAK RIDGE Y-12 PLANT

VOLUME I

February 26–March 7, 1996

U.S. Department of Energy
Oak Ridge, TN 37830

I, by signature here, acknowledge that I concur with the TEAM LEADER in the findings and conclusions of this report in my assigned functional area.

Ken Rhyne
Criticality Safety

Doug Outlaw
Criticality Safety

Cliff Hsieh
Management

Jim Grise
Management

David Allen
Operations

Bob Baeder
Operations

Lon Brock
Procedures

Tom Donovan
Procedures

John Conlon
Safety Envelope

Ken Kellar
Safety Envelope

Ted Hinkel
Training and Qualification

Ed Little
Training and Qualification

CONCURRENCE:

Jeffry Roberson
Senior Advisor

Date 3/7/96

APPROVED:

John Rothrock
RA Team Leader

Date 3/7/96

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Readiness Assessment (RA) is one of several activities to be completed prior to resuming Disassembly/Assembly (D/A) operations at the Oak Ridge Y-12 Plant. The Manager, Oak Ridge Operations Office (ORO) will rely, in part, on the results of this assessment in determining whether the criteria for safe operations have been met.

The Y-12 Plant is a government-owned, contractor-operated facility located in Oak Ridge, Tennessee. For many years, the primary mission at Y-12 was the production of uranium weapons components. In recent years, Y-12 has been assigned roles in support of stockpile reduction initiatives. The D/A processes are a key portion of the Y-12 activities and are essential to the completion of national commitments in the reduction of nuclear stockpiles worldwide.

The D/A processes at Y-12 include the disassembly and assembly of nuclear weapons components.

The D/A mission area encompasses two facilities, Buildings 9204-2 and 9204-2E. Disassembly activities are conducted in Building 9204-2E and include manual techniques and a single-lathe operation. Disassembled parts are identified, verified, weighed, and transferred to the materials management area for disposition. Assembly activities, conducted in Building 9204-2E, include component certification, verification, pretreatment, and assembly.

At the direction of the Manager, ORO, this RA was conducted February 26 through March 7, 1996, in conformance with the Department of Energy (DOE) Order 5480.31/ O 425.1 and associated standards. The RA was a systematic inquiry into the ability of Lockheed Martin Energy Systems (LMES) to operate the Y-12 D/A operations safely. The review stressed six areas: Criticality Safety; Management, Operations, Procedures, Safety Envelope, and Training. Specifically, the areas identified in the DOE Plan-of-Action (POA) for D/A which were considered direct contributors to the September 1994 shutdown were stressed.

The criteria are based upon departmental policy as promulgated through DOE safety rules and orders. The judgment of experienced technical experts was used in applying the requirements to a performance-based review of operations.

The material condition of the facility is satisfactory to support the resumption of operations. There is an increased sensitivity to both criticality safety and conduct of operations concerns. An improved site-wide safety culture has been established. Personnel performance is adequate to support D/A operations.

There were four areas of concern noted during this RA:

1. The alarm signal for the Criticality Accident Alarm System (CAAS) in 9204-2E does not provide an audible or visual warning in all areas of the facility as required by the Operational Safety Requirements (OSRs). The Y-12 Site Office issued guidance to address this condition, including a

requirement to conduct an engineering evaluation to identify permanent solution. The evaluation has not been conducted and current compensatory measures are inadequate for long term operation.

2. A startup plan has not been developed that will confirm operability of equipment, the viability of procedures, and the training of operators during the initial stages of resumption of operations. D/A implementation plans have focused primarily on the completion of the RA process. A plan that integrates management of follow-on graded operations is necessary to ensure safety and facilitate problem resolution.

3. Planned DOE oversight coverage to support resumption of D/A operations is not documented. Enhanced DOE oversight during the integrated LMES resumption activities is the next step in proceeding to routine D/A operations.

4. Procedures to ensure that only certified personnel are permitted to perform D/A operations are not in place.

In addition, a deficiency was noted in implementation for training on the C-5 mock-up disassembly. This training was not formally conducted. Critiques of the evolutions did not capture lessons learned. Differences between the mock-up and the actual device were not delineated. As a result, full training value was not realized.

It is the conclusion of the RA Team that D/A operations can be safely restarted upon: (1) correction of remaining Management Self-Assessment (MSA) and LMES identified pre-start discrepancies that existed at the commencement of this review, and (2) correction of the pre-start findings listed in this report. Successful completion of all findings should be verified by the Y-12 Site Office with the exception of the finding concerning DOE's oversight plan which should be closed by ORO. The DOE Y-12 Site Office was determined to be capable of fulfilling its responsibilities for oversight of D/A operations.

Following is a list of the pre-start findings. A finding is defined as a deficiency requiring corrective action. Pre-start findings must be corrected before startup and a plan-of-action for post start findings must be approved prior to startup. Observations are comments that are intended to assist in improving operations. Findings and observations for each functional area are listed at the end of the summary for that functional area.

Findings: Pre-start

MG7-1 Planned oversight coverage to support resumption of the Disassembly and Assembly operations has not been documented. (Pre-start)

OP5-1 An adequate startup plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators. (Pre-start)

SE1-2 The alarm signal for the Criticality Accident Alarm System (CAAS) in the 9204-2E Material Access Area (MAA) does not provide an audible or visual warning in all areas the 9204-2E Facility as required by the Operational Safety Requirements (OSRs). (Pre-start)

TR1-1 Procedures and practices to remove certifications form personnel who do not maintain proficiency are not established. A Qualified Personnel List is not maintained for the Quality Organization. (Pre-start)

READINESS ASSESSMENT REVIEW FOR THE RESUMPTION OF DISASSEMBLY/ASSEMBLY ACTIVITIES AT THE OAK RIDGE Y-12 PLANT

February 26 - March 7, 1996

1.0 INTRODUCTION

Department of Energy (DOE) Orders 5480.31, O 425.1, and Standard DOE-STD-3006, promulgate policy and prescribe the process for obtaining approval for the startup or restart of a facility and include the requirements for the conduct of the DOE Readiness Assessment (RA) and resolution of identified items. The purpose of this RA is to comply with the cited directives and verify the readiness of the Oak Ridge Y-12 Plant (Y-12) to resume Disassembly/Assembly (D/A) of nuclear weapons components.

The Y-12 Site is a government-owned site operated under contract by Lockheed Martin Energy Systems, Inc. (LMES). Overall management and operations of Y-12 are contracted responsibilities to LMES. DOE oversight is provided by the Oak Ridge Y-12 Site Office with support from the Oak Ridge Operations Office through the Environment, Safety, and Health matrix organization.

The Y-12 Site is one of three installations in Oak Ridge, Tennessee. Activities for restart of operations for Y-12 are divided into mission areas which are defined by programmatic mission description and needs. This RA addresses the D/A activities at Y-12. Disassembly activities, conducted in Building 9204-2E, include manual techniques and a single-lathe operation. Disassembly begins with receipt of the unit on the second floor of Building 9204-2E from the storage area. The unit is transported by forklift truck to the tear-down area inside the Material Access Area, which consists of approximately 7,500 square feet of floor space. The unit is removed from its container and placed on a worktable using an overhead crane and unit-specific lifting device. Disassembly of the unit is performed in a recirculating walk-in hood using manual hand tools and pneumatic devices. A small lathe is used for disassembly activities outside the walk-in hood. As parts are removed, they are identified, verified, weighed, and segregated for further disassembly operations or transfer out of the area. Transferred parts go to the materials management area for final disposition to recovery processing areas.

The DOE conducted the RA in conformance with an approved RA Implementation Plan dated January 30, 1996, and a Plan-of-Action dated January 8, 1996. A team of technical experts reviewed the Y-12 D/A documentation and procedures; inspected equipment, systems and buildings; interviewed personnel; and observed simulated and actual operations. The reviews conducted by each RA team member were guided by the Criteria and Review Approach Document (CRAD) which contain the objectives, criteria, and the approach to satisfy the criteria.

1.1 BACKGROUND

In September 1994, Disassembly/Assembly operations were suspended by LMES, in response to observed violations of administrative safety controls associated with material storage arrays. Operations personnel, upon discovery of the criticality safety violation, did not immediately execute required actions. As an initial step following the event, all Criticality Safety Approvals were walked down, and seven categories of criticality safety nonconformances were identified, with a total of 1,344 individual observations.

Examination of the data from the evaluation of the Criticality Safety Approvals walkdowns, the occurrence report covering the initial infraction, the Type C investigation, and the Defense Nuclear Facilities Safety Board recommendation 94-4, indicate the basic cause to be lack of rigor in Conduct of Operations that permitted less-than-strict compliance with procedures. The DOE RA of Y-12 concentrated on verifying Y-12's readiness to resume operations with respect to material, personnel, and programs in those areas which contributed to the events leading to the shutdown. The specific causal factors (procedural compliance and conduct of operations) related to criticality safety were the focus of the in-depth review. Management and training, areas which also contributed to the shutdown, were fully reviewed. The remaining areas in the core requirements specified in the Implementation Plan were reviewed to the extent necessary to evaluate their contribution to the shutdown.

1.2 SCOPE

The breadth of the RA is defined in the Implementation Plan, Section 3.0. The scope is further defined and detailed in the CRAD which are included in Volume II of this document. These CRADs were written to focus the review on the causal factors of the D/A operations shutdown.

The RA team reviewed the following facilities, systems/equipment, and areas:

Facilities: All facilities, procedures, and processes associated with the D/A function at Y-12, specifically Building 9204-2E.

Systems/Equipment: All systems, equipment, components, and instruments associated with these D/A processes. Specifically selected systems and equipment important to worker and process safety were included, such as:

- Criticality Accident Alarm Systems
- Fire Suppression Systems

NOTE: Refer to the Plan-of-Action, page A-IV-1, for complete listing of additional systems subject to review.

Functional Areas: Those functional areas associated with the D/A mission that contributed to the September shutdown. If inadequacies were observed or identified in a particular functional area that were a result of programmatic deficiencies, then a review of those specific higher level aspects also occurred. The functional areas reviewed were:

Criticality Safety (CS)
Management (MG)
Operations (OP)
Procedures (PR)
Safety Envelope Verification ( )
Training (TR)

2.0 OVERALL READINESS ASSESSMENT PROCESS

The RA Team consisted of a Team Leader, Senior Advisor, technical experts (selected for their knowledge and experience in the functional areas reviewed), and administrative assistants. Each team member had assessment experience, and no team member had any connection with Y-12 D/A operations that impacted their independence to review their assigned functional area. Team member biographies are contained in Appendix I of this report. All team members received site and facility familiarization training, necessary radiological and safety training, and completed additional required reading to familiarize themselves with the RA objectives and review criteria.

The team included members with previous experience in the Operational Readiness Assessment/Review process, as well as technical experts from the DOE-ORO and Headquarters staff. Many of the team members participated in the RA of Receipt, Storage, and Shipment Operations at Y-12.

The Y-12 D/A operations RA was a performance-based review with emphasis on observing performance for adequacy rather than simply reviewing program structure and organization. The RA was conducted in three phases. The first phase was a review of the program documents associated with the functional areas above, procedures used to implement these programs, and actual plant records of completed actions associated with these programs. These documents were evaluated against DOE and facility mandatory requirements. The second phase consisted of observing actual and simulated operations and drills at the facility. This allowed an in-depth evaluation of operator and equipment performance, as well as the quality of procedures. The third phase was an evaluation of level of knowledge for operator ort personnel. Emphasis was placed on the areas of concern observed dur operations. This gave the team members an opportunity to determine whether the problems noted were programmatic or unique to an individual.

2.1 CONDUCT OF THE READINESS ASSESSMENT

The RA onsite review was conducted February 26 - March 7, 1996. The draft RA report was submitted at the close-out briefing. Team members were afforded the opportunity to review the final report before publication. Their agreement with the conclusions of this report is documented herein.

The Team met daily during the onsite review. Team members discussed significant observations or problems identified during the day. These discussions permitted the Team Leader an opportunity to identify any trends or areas where more detailed information was required. Potential schedule difficulties and information gaps were identified and corrected at team meetings.

2.2 READINESS ASSESSMENT DOCUMENTATION PROCESS

Documentation of findings and the assembly of the objective evidence of operational readiness were responsibilities of each team member. Two types of administrative forms were used to accurately document onsite assessment activities and findings.

The Assessment Form (Form 1) was used to document the methods and actions taken by a team member in the criteria evaluation process. Each Form 1 is designed to cover a specific objective defined in the CRAD and lists the means the team member used to measure the site's performance relative to that objective. A final Form 1 is complete enough for an outside agency reviewing the form to follow the inspection logic and means used to verify the site's performance and validate the RAs completeness and adequacy.

The Deficiency Form (Form 2) was used to document the issues identified during the assessment and evaluation process. A Form 2 documents an issue related to a particular objective when deficiencies are discovered within the objective.

All Forms 1 and 2, are attached to this document in Volume II. The determination of whether a finding was pre-start or post start was the responsibility of the Team Leader. That determination was made in consultation with the team member documenting the specific issue and weighed against the criteria set forth in Appendix 3, Volume II, *Determining Pre-start/Post Start Findings*.

This final report is the full compilation of information gained from the RA process and is documented in the forms used to review activities and identify issues. It is signed by the Team Leader and team members. Each team member was given an opportunity to make a statement regarding any differing technical opinion(s) for attachment to this report.

3.0 SUMMARY OF RESULTS

This Section of the report summarizes the information contained in the Forms 1 and 2, which provide the total and complete description of the review activities and results. The results of each functional area are summarized, followed by a list of specific findings and observations. The Team Leader, in consultation with technical experts using the criteria of Appendix 3 of the RA Implementation Plan, determined the category of the findings, either pre-start, post start, or observation. A finding is defined as a deficiency requiring corrective action. Those designated as pre-start must be corrected prior to restart of the D/A activities. Those designated post start must have an approved POA prior to restart. An observation is a comment that provides information that could improve operations. Successful completion of all findings should be verified by

the Y-12 Site Office with the exception of the finding concerning DOE's oversight plan which should be closed by ORO. Upon request, individual members of the RA team are available to assist ORO and the Y-12 Site Office in verifying satisfactory closure of these findings.

Programs and practices to ensure safe operations have improved significantly as compared to the conditions noted at the time of the September 1994 shutdown. The following issues require corrective action prior to resumption:

- o Prompt action has not been taken to resolve a deficiency in alarm coverage of the Criticality Accident Alarm System (CAAS).
- o The contractor has not developed an adequate plan to perform a controlled resumption of D/A operations.
- o DOE has not documented oversight plans for resumption activities.
- o Procedures to ensure that only certified personnel are permitted to perform D/A operations are not in place.

The alarm signal for the CAAS in Building 9204-2E does not provide an audible or visual warning in all areas of the facility as required by the OSR. The Y-12 Site Office issued guidance to address this condition, including a requirement to conduct an engineering evaluation to identify a permanent solution. The evaluation has not been conducted. The compensatory action approved by the Y-12 Site Office was temporary and is not adequate to support operations in the long term.

A startup plan has not been developed that will confirm operability of equipment, the viability of procedures, and the training of operators during the initial stages of operations. D/A implementation plans have focused primarily on the completion of the RA process. Differences exist between the available training (mock-up) and the actual operation which must be managed. D/A does not have a startup plan to complete corrective actions and final requirements to manage the startup effort.

Planned DOE oversight coverage to support resumption of D/A operations is not documented. It is appropriate to have a heightened level of DOE oversight during the initial stages of operations to ensure resumption preparations have adequately prepared the facility and operators for D/A activities. Enhanced DOE oversight of the integrated LMES resumption activities is the next step in proceeding to routine D/A operations.

Training on mock-up disassembly was not formally conducted and much of the available training benefit was not realized. Critiques of the evolutions did not capture lessons learned. This hampered improvements to the process during the follow-on mock-up training. Differences between the mock-up and the actual device were not delineated. Adequate operator knowledge, however, was demonstrated during simulated disassembly operations.

Quality Organization (QO) personnel are not trained on revisions to Tri-Plant procedures such as Equipment, Testing, and Inspection (ETI) procedures.

Additionally, the QO has not upgraded technical procedures to current requirements. This issue was identified by the LMES RA and identified appropriately for correction. The DOE RA Team concurs in this disposition and the finding should be corrected prior to restart.

The closure of findings from YSORT and the LMES RA was incomplete. A review of the evidence files documenting closure of the pre-start findings revealed insufficient information to support closure of items. Also, a Request for Approval documenting a noncompliance with DOE 5480.22 does not include corrective actions to resolve the noncompliance in that a path forward to implement TSRs at the facilities of concern is absent.

The configuration of the CAAS in the D/A facilities and the surveillance testing requirements used to confirm operability of the system do not match the System Analysis Document referenced as the system's technical basis in the OSR. Recent changes to the CAAS were not documented in the safety basis document.

FUNCTIONAL AREA SUMMARIES

Criticality Safety (CS): The objective of this functional area review was to determine if the functions, assignments, responsibilities, and reporting relationships for the criticality safety organization are clearly defined, understood, and effectively implemented with line-management responsibility for control of safety.

A review of the criticality safety organization indicated that it is well established and functioning in support of the operations organization. Their roles, responsibilities, and reporting relationships are clearly described and understood by the management and technical staff within the Nuclear Criticality Safety Department (NCSD). Interviews and records indicated that the criticality safety organization has adequate facilities, equipment, and qualified staff.

The walkdown of the selected Criticality Safety Approvals (CSAs) for the D/A facilities and observations of several evolutions and drills did not identify any criticality safety-related problems. It is apparent that much progress has been made in implementing the changes and improvements to the criticality safety program since the Receipt, Storage, and Shipment Readiness Assessment six months ago.

Review of records and discussions with NCSD staff supporting D/A activities indicate that they are well qualified and adequately trained. Interviews and in-plant observations indicated that they understand the facilities, are well aware of the criticality safety limits, and are well aware of the required actions when reporting abnormal and emergency conditions.

The interviews also indicated that, with the exception of the transition to placing the CSA requirements into stand-alone procedures, most of the changes have been refinements and improvements to the old system. Several external reviews of the Y-12 criticality safety program have indicated that while the existing process did not lead to significant safety concerns, other ways of implementing criticality safety might be more efficient.

Over the past [illegible] months, NCSD, in conjunction with Y-12 operating departments, support organizations, facility safety, and the DOE site office, initiated visits to three other sites to identify areas for improvement and best of practices that could be adapted to the Y-12 Plant Criticality Safety Program. Discussions with NCSD personnel and review of a draft report being prepared by NCSD in conjunction with operations and the DOE site office indicate that many good ideas were obtained from other plants. This process to make the long-term improvements to the Y-12 Criticality Safety Program suggested by many outside reviewers appears to be progressing and should be continued. (CS1-1)

A baseline compliance status of DOE Order 5480.24 has been performed, and three Requests for Approval of Compliance Schedule Agreements have been approved by DOE. The contractor did not identify compensatory measures for these order requirements, and none is required for restart of D/A activities.

The personnel and management systems associated with this functional area were reviewed, and it was judged that the criticality safety program and personnel could support a safe restart of D/A operations.

Observation

CS1-1 Long-Term Improvements to Y-12 Criticality Safety Program should continue.

Management (MG): The objective of this functional area review was to assess Disassembly/Assembly management (DOE and/or LMES) readiness in the following areas: training and qualification; organization and functions; implementation of management systems used to identify, evaluate, and resolve deficiencies and recommendations made by internal and external assessment groups; implementation of the DOE standards program; safety culture improvements; satisfactory completion of the LMES Readiness Assessment; effectiveness of the Facility Representative program; and the satisfactory completion of the Y-12 Site Office self assessment-to determine readiness of their oversight capabilities.

Manager selection criteria, training, and qualification were determined to be satisfactory. Manager level of knowledge and experience is adequate to support increased awareness of safety and continuous improvement.

The organizational structure is well documented, and the managers' roles and responsibilities are adequate. Managers understand their roles and accept their responsibility for safety in the facilities. Mentor functions are adequately described, and mentors performed satisfactorily in their role to support performance improvements. The guidelines for removal of mentors as a compensatory measure for facility safety are clearly defined.

The LMES process for identification, evaluation, and resolution of deficiencies is now under review for process revision. Management attention has improved use of the current system, and adequate results were verified by review of several closure packages. Documentation of the closure verification methods were deficient.

The standards program was determined to be satisfactory and meets the requirements of DOE directives. The requirement to conduct assessments to routinely verify adherence to standards is being improved.

The program to establish a site-wide safety culture is effective and well understood by the work force.

The LMES Readiness Assessment satisfies the requirements of the approved Plan of Action and the Readiness Assessment Implementation Plan. The Readiness Assessment Team was comprised of well-qualified and experienced personnel. The final report was well written and very useful for the conduct of the DOE assessment. The LMES RA process was an effective assessment of facility readiness to resume operations.

The Facility Representative Program is well established. Also, the assigned personnel are adequately trained, qualified, and provide proper oversight of the facility. There is no documented plan to provide additional oversight coverage for the startup period.

The YSO self-assessment of their readiness to support resumption is adequate and verifies DOE readiness to oversee resumption. Review of YSO closure verification activities disclosed a weakness in documentation of the closure verification methods.

In conclusion, the organization, management staffing, training, and qualification are satisfactory. Programs that promote safety are effective and understood by the work force. Line management has demonstrated effective control of facility safety. Mentor participation is effective in improving operations. The Issues Management and Corrective Action Programs are improving. DOE is prepared to provide oversight of operations, but needs to document the resumption coverage requirements. D/A operations can be safely conducted upon correction of the pre-start finding below.

Findings: Pre-start

MG7-1 Planned oversight coverage to support resumption of the Disassembly and Assembly Operations has not been documented.

Findings: Post start

MG3-1 LMES RA evidence files do not contain the necessary verification documentation for pre-start finding closures.

MG8-1 YSORT evidence files do not contain the necessary verification documentation for pre-start finding closures.

Observations:

MG2-1 Upper level management support, counsel and team building could use improvement.

Operations (OP): Operations were reviewed determine whether the knowledge and numbers of operations personnel are adequate to support safe D/A operation, and whether personnel have an adequate and practical understanding of safety and conduct of operations. Documents were reviewed, and various drills and evolutions were observed to determine whether the Conduct of Operations Implementation is in compliance with DOE Order 5480.19, "Conduct of Operations", and is adequate to support safe D/A operations. Personnel were interviewed and observed in the performance of their jobs to determine if they demonstrated a commitment to public and worker safety, health, and environmental requirements. In conjunction with the Critical Safety (CS); Management (MG); Procedures (PR); Safety Envelope (SE); and Training and Qualification (TR) sections, the operability of equipment, the viability of procedures, and the training of operators were reviewed to determine if LMES was ready to resume D/A activities.

The initial stage of the implementation of the Conduct of Operations has commenced. Y-12 D/A is implementing these requirements in a phased approach, but there must be dedicated, consistent, and continuous development in this area as the project matures. The D/A operational performance during evolutions and drills for this Readiness Assessment was satisfactory. The Y-12 D/A compliance assessments of DOE Orders 5000.3B and 5480.19 have been completed, noncompliances have been addressed, and the D/A operations managers and Department of Energy Y-12 Site Office personnel have reviewed the compensatory measures and corrective actions. D/A has a program for periodic management assessment of the continued need and adequacy of the compensatory measures.

The Y-12 D/A Implementation Plans to date have focused on the completion of the respective evaluations of the DOE Order 5480.31 process for the commencement of operations. An appropriate restart program has not been developed for the identified processes, and the processes are fully operable to perform their intended function: to document the operability of the equipment that has been in the stand-down mode, the usefulness of the procedures, and the relevance of training to the intended use of the restarted equipment. (OP5-1)

Revisions to the OSR in September 1995 helped to clarify the issue of the numbers of staff required to support safe operations. The addition of a standing order to provide further detail on the minimum staffing levels based upon the building status further clarified staffing.

In conclusion, the operations and support personnel have been properly trained and are ready to safely perform their jobs upon correction of the pre-start finding identified below.

Findings: Pre-start

OP5-1 An adequate startup plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators.

Procedures (PR): The objective of the procedures functional area of the RA was to determine whether there were adequate and correct procedures for operating systems and utility systems. Also, the system for the control of the issuance and use of procedure revisions was evaluated for viability.

Approximately thirty D/A procedures were reviewed in varying detail during the assessment. Procedures reviewed included technical procedures from both the Disassembly and Storage Organization (DSO), and the Quality Organization (QO). DSO procedure revisions began at an earlier date than QO as a result of the amount of management attention given to DSO during the RSS restart effort. However, the QO did not benefit from this readiness attention. Following the LMES RA for D/A that identified QO procedure deficiencies, renewed management attention was focused on the problem and a QO Manager of Procedures, Training, and Document Control was appointed on February 23, 1996, just prior to the beginning of the RA.

DSO has indicated that of the sixty procedures requiring revision, approximately 47 have been completed with the remainder being primarily administrative. QO on the other hand had approximately twenty-six technical procedures to revise. At the beginning of the RA, 17 remain to be revised to the 9/1/95 revision of Y10-102. Of the 17 remaining to be revised, seven had associated CSAs. The implementation of the CSA revisions has been previously identified by a LMES RA as pre-start and post-start findings. This is an appropriate disposition of the findings.

Better procedure history files and more adequate records of verification and validations are noted improvements to the procedures program. The history files for recent revisions to procedures for QO indicate that the revision process is being conducted in accordance with Y10-102 with records of verification and validation, and USQ screens being a part of the process.

The D/A personnel interviewed had a good understanding of step-by-step procedure compliance and the concept of and mechanics of working copies of procedures. All of the D/A personnel interviewed concerning procedure use were sufficiently familiar with the stop and recover requirement where difficulties are encountered with the evolution of a procedure. No difficulties were identified in the evolutions observed.

An adequate knowledge of the procedure process was demonstrated through the shift evolution and drill process observed. Implementation of the procedures for these activities was adequate.

Findings:

None

Safety Envelope Verification (SE): The objective of this functional area review was to verify that adequate and correct safety limits for operating systems have been established; to verify that programs are in place to calibrate safety system components; to confirm and periodically reconfirm the condition and operability of safety systems; and to verify that the safety systems are currently operable.

The Operational Safety Requirements (OSRs) adequately ensure the operability of the D/A safety significant systems. However, the system configuration and surveillance requirements for the CAAS do not match the description provided in the system's technical basis document referenced in the OSRs. (SE1-1)

The CAAS was determined to be fully operable in accordance with the OSRs with the exception there was no audible or visual alarm in one area on the third floor of Building 9204-2E. (SE1-2)

Although the safety limits and controls are adequate for the D/A activities, the D/A OSRs and their supporting safety documentation do not comply with the requirements of DOE Orders 5480.22 and 5480.23. The Request for Approval to address noncompliances with DOE Order 5480.22 does not provide clear actions or a schedule that will result in satisfactory development and approval of Technical Safety Requirements (TSRs). (SE5-1)

The program to calibrate equipment for the safety significant systems adequately tracks the calibration requirements for all necessary equipment. However, improvements were identified that would add value to the CAAS maintenance program. (SE3-1)

In summary, the D/A safety envelope was examined through record reviews, interviews of personnel supporting D/A activities, and observation of shift evolutions. It was determined that D/A operations will maintain the safety envelope upon correction of the pre-start finding identified below.

Findings: Pre-start

SE1-1 The alarm signal for the CAAS in the Building 9204-2E Material Access Area does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the OSRs.

Findings: Post start

SE1-2 The configuration of the CAAS in the D/A facilities and the surveillance testing requirements used to confirm operability of the system do not match the System Analysis Document referenced as the system's technical basis in the OSRs.

SE5-1 The D/A facilities do not have TSRs that are fully compliant with DOE Order 5480.22. The Request for Approval that addresses this noncompliance does not clearly specify the actions or schedule to develop TSRs.

Observations:

SE3-1 The CAAS annual surveillance procedure does not include pass/fail criteria for the as found condition of the detector.

Training (TR): The objective of this functional review was to ensure that the training and qualification process and the execution of the training program was sufficient to resume Disassembly and Assembly operations at the Oak Ridge Y-12 Facility.

Procedures to ensure that only certified personnel are permitted to perform duties are not in place. These requirements must be met to ensure operations are safely conducted and must be implemented prior to restart. A strong relationship between line management and the training organizations has not yet been established at Y-12. Training programs have achieved excellence as a result of the extensive oversight associated with resumption activities. The training program for the Quality Organization has only recently been upgraded.

Training on the C-5 Unit disassembly was not formally conducted. Critiques of this evolution did not capture lessons learned. Differences between the mock-up and the actual disassembly of a C-5 unit were not delineated. Records documenting the training are of insufficient detail and lack review of senior managers.

Training has been performed to the latest revision to procedures. The administrative process for ensuring that Quality Organization personnel are trained to the latest revisions to procedures is deficient as there is no system to ensure that revisions to Tri-Plant Equipment, Testing, and Inspection (ETI) procedures are screened for training.

A baseline compliance review of the requirements of DOE Order 5480.20A within the areas of Disassembly and Assembly activities has been performed. Noncompliances are appropriately identified, corrective measures are documented, and are now being implemented. The administration of the drill program is effective and has improved since the Readiness Assessment for Receipt, Shipment, and Storage.

Improvements in training performance since the Readiness Assessment for Receipt, Storage, and Shipment were noted. It was determined that training is adequate to support the resumption of D/A operations upon correction of the pre-start finding identified below.

Findings: Pre-start

TR1-1 Procedures and practices to remove certifications from personnel who do not maintain proficiency are not established. A qualified personnel list is not maintained for the Quality Organization.

Findings: Post-start

TR2-1 Training on the C-5 Unit disassembly was not formally conducted. Critiques of this evolution did not capture lessons learned. Differences between the mock- up and the actual disassembly of a C-5 Unit were not delineated. Records documenting the training were of insufficient detail and lacked review of senior managers.

TR4-1 Quality Organization personnel are not trained on revisions to Tri-Plant ETI procedures.

Observations:

TR1-2 Management of training at Y-12 is not well coordinated and lacks effective direction and supervision from line management.

4.0 LESSONS LEARNED

DOE O 425.1, Startup and Restart of Nuclear Facilities, requires lessons learned with respect to the RA process and to the operations, design, and maintenance of DOE facilities. The following lessons learned are provided for this readiness assessment.

Core Requirement #10 of DOE O 425.1 specifies as an objective that "An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators." This objective is often misunderstood by activities/facilities preparing for restart. Most organizations evaluated in ORRs/RAs assume that plans and activities are necessary up to the conduct of the ORR/RA, but do not prepare plans to address measures appropriate to safely restore full operations following the ORR/RA. Conditions normally exist which prevent achievement of full readiness for a period of time after the ORR/RA is completed. Operational restrictions may still be in place. Final operator qualification may not yet be achieved. Testing restrictions may still remain. Actual use (vice walkthrough) of operational procedures is often not possible. Many facilities/activities have experienced procedural problems, equipment failures, and training deficiencies which have delayed proceeding to full operation when they do receive permission to resume operations following the ORR/RA. A graded plan which describes the process to be used to perform operations with adequate oversight and supervision sufficient to assure safety and facilitate problem resolution is required. This requirement should be clearly stated in Core Requirement #10.

During this RA some interviews were scheduled during the operations phase. This resulted in coordination problems for the inspected activity and difficulties for the RA team personnel in observing operations and conducting interviews at the same time. Some interviews were missed as a result. While this lesson has probably been learned before, it is reiterated that a dedicated period for interviews should be planned to occur after the record reviews and operations phases of the ORR/RA.

For some of the interviews, multiple interviews were scheduled in the same room. Even with a large size room, this does not promote the correct environment for conducting interviews. This practice should be avoided.

This RA essentially involved the review of two separate activities, the D/A operations and the Quality Organization. As a result, it was necessary for the team to visit personnel in various buildings and to review records at several locations during the RA. This resulted in a lack of optimum efficiency for the team. Where possible, it is recommended that records locations and personnel contacts be assigned by the evaluated activity so as to maximize the efficiency of the review process.

APPENDIX 1

Y-12 RA FUNCTIONAL AREA ASSIGNMENTS AND BIOGRAPHICAL SKETCHES FOR RA TEAM MEMBERS

APPENDIX 1

DISASSEMBLY/ASSEMBLY READINESS ASSESSMENT
FUNCTIONAL AREA ASSIGNMENTS

FUNCTIONAL AREA	TEAM MEMBER
TEAM LEADER	JOHN ROTHROCK
SENIOR ADVISOR	JEFF ROBERSON
RA COORDINATORS	DONNA CLEVENGER-EGAN JO KERSH
CRITICALITY SAFETY (CS)	KEN RHYNE DOUG OUTLAW
MANAGEMENT (MG)	CLIFF HSIEH JIM GRISE
OPERATIONS (OP)	DAVID ALLEN BOB BAEDER
PROCEDURES (PR)	LON BROCK TOM DONOVAN
TRAINING (TR)	TED HINKEL ED LITTLE
SAFETY ENVELOPE VERIFICATION (SE)	JOHN CONLON KEN KELLAR

APPENDIX 1

BIOGRAPHICAL SKETCHES FOR RA TEAM MEMBERS

Allen, David R. (Operations) is the Chief of the Environmental Operations Branch, Environmental Protection Division, Department of Energy-Oak Ridge Operations Office. He holds a BS in Mechanical Engineering from the University of Kentucky and is a licensed Professional Engineer. He has 15 years experience working with both private and Federal nuclear facilities and equipment. The first three years of his career were with the Tennessee Valley Authority where he was a lead Mechanical Engineer responsible for the construction and installation of both safety and non-safety related piping and components at the Watts Bar Nuclear Plant. He then spent one year as a Facility Safety Engineer with the Clinch River Breeder Reactor Project. After cancellation of that project, he served as a Mechanical Engineer in the Enriching Operations Division, responsible for all aspects of the Paducah Gaseous Diffusion Plant, but primarily focusing on the operational aspects of the facilities. In 1986, he was selected as the Site Manager and Contracting Officer's Representative for the Department of Energy's Paducah Gaseous Diffusion Plant where he served until 1991 when he assumed his current position. He has led several multi-disciplinary functional appraisals of the Oak Ridge Operations Office facilities, looking at compliance with all aspects of Environmental, Safety, and Quality program implementation. He led a team of specialists in conducting a nuclear regulatory inspection of both the Paducah Gaseous Diffusion Plant, and the Portsmouth Gaseous Diffusion Plant. He also was the Team Leader of Type A Investigation Board investigating a fatality on the Oak Ridge Operations Office Reservation.

Baeder, Bob (Operations) is a senior engineer with XL Associates supporting the Department of Energy for Defense and Environmental Management Programs. He holds a B.S. in Naval Engineering from the United States Naval Academy, Masters' Degrees in Naval Architecture and Marine Engineering from the Massachusetts Institute of Technology, and he is currently earning his Ph.D. in Management. He has more than 24 years of naval experience as a nuclear submarine officer. His experience in the Navy Nuclear Power Program includes tours as the Reactor Control Officer on a new construction submarine, the Engineer Officer for a submarine completing a regular overhaul, and the Executive Officer during a reactor refueling submarine overhaul. Additionally, he served as the Associate Chairman of Mechanical Engineering at the United States Naval Academy and taught thermodynamics, fluid mechanics, and nuclear engineering. He also served for the Chief of Naval Operations in Program Management for the Navy's Ashore and Afloat Command, Control, and Communications Systems (C3). In that capacity, he participated in a complete assessment of the Navy's C3 systems and developed major changes to align afloat and ashore C3 systems in a program of common engineering development. As a result of his significant military experience in nuclear power and his solid academic background, Mr. Baeder brings extensive expertise in reactor plant operations, nuclear and thermodynamic/fluid mechanics engineering, maintenance, and mechanical design. Mr. Baeder retired from the Navy in September 1994, and immediately joined XL Associates Inc., serving for the DOE support in Operational Readiness Reviews (ORRs), Readiness Assessments (RAs), Standards and Requirements Implementation, and Performance Assessments and Self-Assessments. In these capacities, he has recently served on the Savannah

River Site (SRS) Replacement Tritium Facility (RTF) Validation and Verification (V&V), the SRS In-Tank Precipitation (ITP) Assessment, the Oak Ridge Y-12 Receipt, Storage, and Shipment (RSS) Restart Readiness Assessment, the Oak Ridge K-25 Deposit Removal Project (DRP) ORR, and the SRS F-Canyon Phase II Restart ORR. Additionally, he is presently scheduled to participate in the Nevada Test Site (NTS) Combined Device Assembly Facility (CDAF) ORR.

Brock, Lon (Procedures) is a member of the Facility Safety Engineering Team in the Quality and Facility Safety Division, DOE-ORO. He holds a M.S. degree in Physics and a B.S. degree in Engineering Physics, both from the University of Tennessee. He has a total of 28 years experience with DOE and in commercial nuclear power, aerospace, and manufacturing. He has been with DOE since 1991 where he has served as the ORO Standards Co-Manager for technical concerns and as the ORO Metric Transition Coordinator. His nuclear experience includes facility safety, quality assurance, design, and licensing, and he has managed a PWR engineering procedures program. His experience in quality engineering includes reviews of procedures, quality assurance plans, nonconformance reports, root cause analyses, design change requests, engineering services task packages, construction workplans, maintenance requests, post-maintenance testing, and post-temporary alteration testing.

Clevenger-Egan, Donna (Lead RA Coordinator) is currently a support contractor serving the DOE-ORO Quality and Facility Safety Division as a Senior Quality Assurance Specialist. She completed the two year Office Administration Program from the University of Tennessee in 1983. Ms. Clevenger-Egan has six years of experience providing administrative support services to quality assurance related missions and over seven years of management experience, all of which has been gained during the provision of support services at the Department of Energy Oak Ridge Operations Office. She has diverse administrative and management skills, and has successfully served as the readiness review coordinator on several DOE restart reviews, including the Y-12 Receipt, Storage, and Shipment Readiness Assessment, and the K-25 Deposit Removal Operational Readiness Review. She completed the Operational Readiness Review training in December 1994.

Conlon, John (Safety Envelope) has a B.S. in civil engineering and more than twelve years of experience in the nuclear and environmental management fields. Mr. Conlon was in the U.S. Navy Nuclear Propulsion Program where he served as the engineering department head on board a nuclear powered submarine and as the operations officer at a landbased prototype reactor. Mr. Conlon has been a senior project engineer for PAI Corporation since 1993. During his time with PAI, he has supported the U.S. Department of Energy (DOE) in operations, safety, and environmental management projects at several facilities. He evaluated safety documentation and operating limits for the tritium and high level waste facilities at the Savannah River Site. He developed a training and qualification program for DOE facility representatives at the nuclear material separations facilities at Savannah River. He evaluated occurrences at the F- and H-Canyons in Savannah River and provided recommendations for corrective actions. He conducted conduct of operations appraisals of facilities at Lawrence Livermore Laboratory and waste management facilities on the Oak Ridge reservation. He was a team member for a ESH&QA management appraisal of the K-25 Site. He has participated in ESH&QA functional appraisals of the Portsmouth and Paducah Gaseous Diffusion Plants. He participated in the Readiness Assessment of

Receipt, Storage, and Shipment at Y-12, and the Operational Readiness Review for the K-25 Deposit Removal Program.

Donovan, Thomas K. (Procedures) is a senior consultant with XL Associates. He holds bachelors and masters degrees in Biology and a Sc D in Environmental Health. He has over thirty years of experience in Environmental, Safety, and Health activities. The first twenty plus years were spent in various capacities with the Tennessee Valley Authority including positions in project management and investigation of employee concerns over the safety of nuclear plants. For the past seven years, he has been a consultant to DOE. As a consultant at Rocky Flats, he was involved in the preparation of the Environmental Assessment for the Plutonium Recovery Modification Project as well as recent activities for the FRETS Comprehensive Risk Assessment. He managed a technical support group providing services to DP in Washington that included assessments, Tiger Teams, and EH assessment action item activities. At the Pinellas Plant, he provided environmental engineering and health and safety services including preparation of several environmental analyses, Tiger team action plan preparation, and safety analyses. For ORO, he managed a support services contract that provided Environmental, Safety, & Health, Quality Assurance, and engineering services to the site offices and with LMES for the GAAT-TS. His activities at LANL include serving as the Lead Industrial Safety Mentor where his activities included supporting LANL management with restart activities, and assisting with the TA-55 Upgrade CDR and LANL Site Wide EIS. His most recent experiences have centered on providing management assistance in the areas of procedure preparation and formality of operations.

Grise, James E. (Management) is a Senior Executive Consultant with SMS Corporation. He holds a [illegible]ngineering and an MS in Marine Affairs. Mr. Grise has 35 years of e[illegible]e in the engineering and nuclear fields. The first 29 years of his c[illegible] were spent in the Navy, including 24 years in the Nuclear Propulsion Prog[illegible]. He spent six years as the Commanding Officer of two nuclear submarines. Post-submarine command tours included assignments in nuclear maintenance, operations, inspections, and training. As Commanding Officer of the Navy's largest afloat facility for nuclear plant repairs, he was responsible for the supply and repair of 13 submarines. In 1988, Mr. Grise retired from the Navy. Since that time, he has served as a consultant to the Department of Energy in the areas of training, inspections/appraisals, Operational Readiness Reviews, and as a Conduct of Operations monitor at various facilities. As a result of his Navy nuclear experience, he possesses expertise in most areas of nuclear operation and maintenance, particularly training, management, and inspection/oversight. Additionally, Mr. Grise has three years of experience at Savannah River Site, one and one-half years at Rocky Flats several months at Pantex, and two years at Los Alamos National Laboratory. Mr. Grise has participated in Operational Readiness Reviews at K-Reactor, ITP Facility, F-Canyon and FB-Line at Savannah River Site, the Building 707 Contractor Operational Readiness Review at Rocky Flats, the Plutonium Facility Readiness Assessment at Los Alamos National Laboratory and the AT-400A packaging Contractor Readiness Assessment at Pantex.

Hinkel, Ted (Training and Qualification) is employed by the Department of Energy (DOE) as a Technical Training Specialist in the Training and Development Division, Oak Ridge Operations Office. He holds a BS in Mechanical Engineering. Mr. Hinkel has 15 years experience in the Nuclear Field. He spent 14 years in the Naval Nuclear Propulsion field as a Shift Test Engineer, Fluid and Mechanical Systems Nuclear Engineer and Supervisory Nuclear Engineer. His experience involved reactor plant operations and maintenance and eight years with Naval Nuclear Technical Training Programs in Procedure Preparation, QFI, Radiological Controls and specialized nuclear maintenance evolutions. Mr. Hinkel has also been employed with a contractor to DOE, working on Decontamination/ Decommissioning and Technical Training Program projects at Hanford and Rocky Flats. He has been a member of numerous naval nuclear propulsion program radiological controls practice evaluations and midterm inspections. Mr. Hinkel recently transferred to the DOE and completed Operational Readiness Review training against the new Order 5480.31.

Hsieh, Cliff (Management) is an Electrical Engineer serving as a Senior Quality Engineer for the Quality and Facility Safety Division, Department of Energy-Oak Ridge Operations Office. He holds a B.S. in Electrical Engineering from the University of Illinois and a MS in Environmental Engineering from the University of Tennessee. His professional experience includes first 20 years in commercial nuclear power design, construction, and preoperation while serving as an electrical engineer with the Tennessee Valley Authority (TVA). During this period, 10 years was devoted to construction and system operations as he was responsible for various auxiliary and back-up systems for reactor control. His diverse background led to other important functions as auditor and procedure writer, and was instrumental in the development of inspection programs at TVA. As a certified lead auditor with TVA, he led and participated in numerous audits and inspections. As a Department of Energy employee since 1988, his major responsibility is the oversight of contractor waste management programs that require his involvement in the reviews of technical and safety specifications, conduct of operations, and quality issues. Mr. Hsieh has participated and led numerous multifunctional reviews, including leading two successful operational readiness evaluations for the Highly Enriched Uranium Refeed Activity at Portsmouth Gaseous Diffusion Plant, and one operational readiness review for the Deposit Removal Project at the Oak Ridge K-25 Plant.

Kellar, Ken (Safety Envelope) is employed by the Department of Energy as a Nuclear Engineer. He holds a BS in Engineering Physics and is currently working on his MBA. He spent the first seven years of his career as an officer in the Naval Nuclear Propulsion Program. His Navy experience involved nuclear plant operations culminating in qualification as Chief Engineer. During his later duty, he was an instructor of Reactor Operations and Supporting Theory. Mr. Kellar came to the Department of Energy in 1992. His primary duties have consisted of performance of assessment activities. Those activities include: Nevada Test Site and Kansas City Plant Technical Safety Appraisals; Building 707, Rocky Flats Operational Readiness Review (training assessment); review of training and operator proficiency for the Los Alamos, Omega West Reactor, Type B Investigation; Pantex, Zone 4 Stage Right, Operational Readiness Review (training assessment); Weapons Complex Training Surveys in support of the Defense Nuclear Facilities Safety Board Recommendation 93-3; and the Defense Waste Processing Facility ORR for the Savannah River Site (quality assurance).

Kersh, Jo is employed by the Department of Energy as a Secretary and ORR Coordinator for the Defense Programs' Office of Engineering, Operations, Security, and Transition Support. She has nine years experience as an administrative and technical support assistant in Government service. The last eight years have been with the Department of Energy. She has provided coordination and technical support for the Defense Programs' Technical Safety Appraisal at Kansas City Plant, the Replacement Tritium Facility Operational Readiness Review, FB-Line, and F-Canyon, F-Canyon Phase II, and DWPF, Operational Readiness Reviews at Savannah River site, and the Receipt, Storage, and Shipment Readiness Assessment at the Oak Ridge Y-12 Plant.

Little, Edward S. (Training and Qualification) has over 30 years of operational and technical management experience in the U.S. Navy. His experience included extensive involvement in the management, supervision, performance based training, material, and management assessment of naval nuclear reactors. He is currently employed as a Principal Analyst with Sonalysts, Inc. As a nuclear trained submarine officer, he served on five nuclear powered submarines. His submarine shipboard assignments included responsibilities as an Engineering Department Division Officer, Engineer Officer, Executive Officer, and Commanding Officer. Significant navy staff assignments included duties as a member of the Atlantic Fleet Navy Nuclear Power Examining Board, as a member of the staff of ADM H.G. Rickover, and as a Deputy Squadron Commander. He served as Commanding Officer of a nuclear submarine repair ship and was responsible for the resupply and repair of a squadron of ten nuclear powered submarines. His experience with DOE has included participation in a DOE ORR for Building 771 at the Rocky Flats Plant; the evaluation of the state of training at four DOE sites in response to Defense Nuclear Facilities Safety Board Recommendations 92-7 and 93-3; and the review and evaluation of the effectiveness of DOE directives concerning the assembly, disassembly, and testing of nuclear weapons in response to Defense Nuclear Facilities Safety Board Recommendation 93-1.

Outlaw, Doug (Criticality Safety) is an Experimental Nuclear Physicist with a broad background in technical assessment and policy analysis of environmental, safety and health issues and problems for Department of Energy, NASA, and other Federal agencies. His principal efforts at SAIC have been supporting the Department of Energy and NASA Headquarters and the major contractors operating the Department of Energy sites in safety and environmental analysis. This has included preparation of Safety Analysis Reports and various environmental documents, such as Environmental Assessments and Impact Statements. He is currently serving as a Senior Program Manager and Senior Scientist at SAIC. Dr. Outlaw served as a technical expert in the areas of safety analysis, criticality safety, and other safety-related areas for facility reviews of the Department of Energy Defense Programs facilities. Between 1991 and 1993, Dr. Outlaw has served as a technical expert in eight Department of Energy-Headquarters/Defense Programs sponsored Technical Safety Appraisals of major Department of Energy facilities, including the Mound Plant, Lawrence Livermore National Laboratories, the Pantex Plant, the Nevada Test Site, and the Kansas City Plant. Since 1993, Dr. Outlaw has served on Operational Readiness Reviews for Zone 4 at Pantex, and F-Canyon Phases 1 and 2, FB-Line, ITP, and DWPF at the Savannah River Site, Building 771 at Rocky Flats, and Receipt, Storage, and Shipment at Y-12. Dr. Outlaw has

served as the technical expert in the areas of safety envelope, criticality safety, emergency preparedness, engineering support, and configuration management.

Rhyne, Ken (Criticality Safety) is a Nuclear Engineer with a background in systems engineering and safety analysis. He is presently serving as a program manager for DOE-OR's Oak Ridge National Laboratory (ORNL) Site Office. His duties in this capacity include oversight of ORNL's programs in the areas of facility safety documentation upgrades, criticality safety, fire protection, nuclear materials control and accountability, quality assurance, configuration management, and Unreviewed Safety Question Determinations (USQD). Prior to this assignment, his other DOE-ORO assignments were with the Safety and Health Division performing safety documentation reviews, and the High Flux Isotope Reactor Site Office providing a liaison between DOE and the operating contractor. His professional experience prior to DOE involved systems engineering with the Tennessee Valley Authority at both the Sequoyah and Watts Barr Nuclear Plants. Mr. Rhyne participated in the September 1995 Y-12 Readiness Assessment for Receipt, Storage, and Shipment.

Roberson, Jeff (Senior Advisor) is a Nuclear Engineer with the Department of Energy Defense Programs. He holds a BS in Nuclear Engineering from the Georgia Institute of Technology. He has 13 years experience in the nuclear field. He spent the first years of his career at the E.I. Hatch, Nuclear Generating Facility of the Georgia Power Company, Baxley, Georgia, in the Reactor Controls Division, conducting fuel transfer operations during two refueling outages. He then served in the Navy's Nuclear Power Program where he served as Assistant Engineer on a nuclear submarine. He was certified as a Chief Nuclear Engineer by the Naval Reactors Branch of the Department of Energy. As a result of his Navy and civilian experience, he has significant background in many areas of nuclear operations, maintenance, health physics, and nuclear design. Mr. Roberson separated from the Navy in 1990 and spent one year as a Programs Manager for a major acquisition program for the Department of the Navy. Mr. Roberson joined the Department of Energy in 1991. Since then, Mr. Roberson has worked in the Defense Programs' Office of Inspections as a Team Leader for the 1992 Defense Programs Technical Safety Appraisal at the Lawrence Livermore National Laboratory and Functional Area Leader on several other Technical Safety Appraisals. Mr. Roberson served on the Operational Readiness Review of the Replacement Tritium Facility at the Savannah River Site in the Conduct of Operations area. He also served on the Pantex Zone 4 Operational Readiness Review as the Area Leader in Conduct of Operations, as the Assistant Team Leader for the 1994 Operational Readiness Review of Building 707, Rocky Flats, and for the F-Canyon Operational Readiness Review in the Maintenance and Safety Envelope functional areas. Mr. Roberson's areas of expertise are conduct of operations, maintenance, safety envelope, and radiation protection.

Rothrock, John (Team Leader) is the Director of the Safety and Health Division for the Oak Ridge Operations Office. He holds a BS in Electrical Engineering from Washington State University and a Master of Engineering degree from Texas A&M in Industrial Engineering. He is a former Army officer. He has 25 years of government experience with the last 15 years being spent with the Department of Energy. The first years of his career were spent as a Radar Engineer on the PATRIOT missile system. He joined the Department of Energy in 1980 as a

Contracting Officer's Representative and Senior Plant Representative at Goodyear Aerospace Corporation, where he managed production of gas centrifuge machines for the Department of Energy Uranium Enrichment Program. In 1985, he became the Director of the Oak Ridge Operations Office Quality and Reliability Division with responsibility for the Quality Assurance, Reliability, Maintenance Management, and Energy Conservation Programs. In 1991, Mr. Rothrock became the Safety and Health Director with responsibility for health physics, criticality safety, fire protection, industrial safety, industrial hygiene, and transportation safety. Mr. Rothrock has extensive appraisal and investigation experience. He is Department of Energy Operational Readiness Review and Tiger Team trained. He was a member of the Technical Safety Appraisal at the Plutonium Finishing Plant at Hanford. Mr. Rothrock chaired the Department of Energy Type B investigation of the embrittlement of the High Flux Isotope Reactor pressure vessel. Over the last few years, Mr. Rothrock was the Team Leader of several multi-disciplinary Environmental, Safety, and Health functional appraisals at the Oak Ridge Operations Office sites. He has also served as a team member on the Y-12 Receipt, Storage, and Shipment Readiness Assessment, and Quality Verification Inspections at several of the Department of Energy reactors, including the FFTF at Hanford and EBR-II and NRAD at ANL-West.

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APPENDIX 2

CRITERIA AND REVIEW APPROACH DOCUMENTS

APPENDIX 2

CRITERIA AND REVIEW AND APPROACH DOCUMENTS

CRITICALITY SAFETY (CS)

OBJECTIVE (CO-24)

CS.1 Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety. **(CORE REQUIREMENT #11)**

Criteria

The functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization are adequately defined, understood and effectively implemented. This includes confirmation that nuclear criticality management and staff clearly understand and accept their responsibilities for control of safety. (5480.19, para 4)

The functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of personnel assigned to augment/strengthen the criticality safety organization have been defined. The conditions under which temporary (non-permanent and/or borrowed personnel) can be removed have been documented. (5480.19, Ch. I and III)

Approach

Record Review: Review the disassembly/assembly operations records to ensure that the functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization are adequately defined for disassembly/assembly functions. Focus should be on disassembly/assembly operations and change since the Receipt, Storage, and Shipment Readiness Assessment. Review the written definitions of the functions, assignments, responsibilities, reporting relationships, specific qualifications, and required experience of temporary (non-permanent and/or borrowed personnel) assigned to the nuclear criticality safety organization. The conditions under which these personnel can be removed is documented. (5480.19, Ch. I and III)

Interviews: Check that management understands and has implemented the functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization specific to disassembly/assembly, ensure communications between Criticality Safety Organization and line management are clear. Verify that individuals understand their assignments, responsibilities, and reporting relationships and conditions under which temporary personnel may be released.

Shift Performance: Observe how management communicates and has implemented control of safety.

OBJECTIVE (CO-27)

CS.2 A baseline compliance status review of Department of Energy Order 5480.24 has been performed. Noncompliance items have been addressed. (CORE REQUIREMENT #7)

Criteria

All noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance. Actions described in the Request for Approval have been adequately addressed for the facility/activity. (Y/AD-623, Plan for Continuing and Resuming Operations, dated October 1994, states this requirement)

Compensatory measures specified in the Criticality Safety Approval are adequately understood and implemented by operations managers. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review the Order compliance package for Department of Energy Order 5480.24, including all applicable Compliance Schedule Agreements, exemptions and compensatory measures. For identified Requests for Approvals, verify that schedule commitments have been met and compensatory measures identified.

Interviews: Interview management personnel to ensure they are aware of the noncompliance(s) and actions necessary to fully carry out the Order requirements, and any interim compensatory measures.

Shift Performance: Where appropriate, observe the implementation of any specified compensatory measures within the facility to determine their effectiveness.

MANAGEMENT (MG)

OBJECTIVE (CO-23)
MG.1 The management qualifications of contractor personnel responsible for facility operations are adequate. **(CORE REQUIREMENT #19)**

Criteria

The Oak Ridge Y-12 Site contractor operations line management, up to and including the Manager of Nuclear Operations, have sufficient applicable experience and/or training to adequately understand facility operations and safety systems under their cognizance. (DOE-STD-1063-93, para 4 and 5, 5480.20A, para 9, Ch. I, para 7, and Ch. 4, 5480.19, para 3.a., 5000.3B, para 5.d, 8, and 9.h)

Entry-level requirements are established for each operations management position and include as applicable the minimum education, experience, technical, and medical requirements. (5480.20A, para 9, Ch. 1 and 4)

Approach

Discuss training and qualification review results with the Readiness Assessment team members evaluating the training area.

Interviews: Interview members of the contractor operations and safety organizations and mentors in place as compensatory measures and assess understanding of disassembly/assembly operations and the safety envelope. Verify whether management effectively promotes awareness of requirements for safe operation as reflected in Criticality Safety Approvals, Operational Safety Requirements and appropriate procedures by interviewing operations personnel.

Shift Performance: Observe management personnel interactions with operations personnel during evolutions and drills to assess qualification.

OBJECTIVE (CO-24)
MG.2 Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety. **(CORE REQUIREMENT #11)**

Criteria

The functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations), have been adequately defined, understood and effectively implemented. This includes confirmation that line management clearly understands and accepts their responsibilities for control of safety. (5480.19, para 4)

The functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors assigned as compensatory measures have been defined. The conditions under which mentors can be removed have been documented. (5480.19, Ch. I and III)

Approach

Record Review: Review the records to ensure that the functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations), have been adequately defined. Review the written definitions of the functions, assignments, responsibilities, reporting relationships, specific qualifications, and required experience of mentors assigned as compensatory measures. The conditions under which mentors can be removed have been documented. (5480.19, Ch. I and III)

Interviews: Interview selected managers to verify that line management understands and has implemented the functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations). Verify that individuals understand the conditions under which mentors can be removed.

Shift Performance: Observe how line management communicates and has implemented control of safety.

OBJECTIVE (CO-25)
MG.3 A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. **(CORE REQUIREMENT #6)**

Criteria

The outstanding open findings and corrective actions have been assessed by the contractor to determine if their lack of closure may preclude safe operations and if appropriate actions have been taken for those determined to have impact. (5480.19, Ch. VI and VIII; 5700.6C, para 9.b.(1)(c), 9.b.(3)(a), and Attachment I, para II.A.3.)

Approach

Record Review: Review the Energy Systems Action Management System and any other systems used to identify, evaluate, and resolve deficiencies, selecting representative issues and assessing the adequacy of the program. Assess the backlog and prioritization system for reducing it. This will include the Lockheed Martin Energy Systems, Inc. Operations Manager's reevaluation of internal and external assessment performed on their operations since October 1993. Determine if the corrective actions have been appropriate as discussed in Y/AD-623 and if Lockheed Martin Energy Systems, Inc. operations' response to outside reviewer comments and findings are adequate.

Interviews: Interview operational and management personnel to establish their understanding of the program.

Shift Performance: Evaluate the line management's understanding of the control of safety during a simulated off-normal safety condition.

OBJECTIVE (CO-27)
MG.4 A systematic review of the facility's conformance to applicable Department

of Energy Orders has been performed, any contractor non-conformance issues have been identified, and schedules for gaining compliance have been justified in writing and formally approved. **(CORE REQUIREMENT #7)**

Criteria

Noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance. Actions described in the Requests for Approvals have been adequately addressed for the facility/activity. This includes both the site-level programmatic and facility-level compliance and adherence-based assessments. (Y/AD-623, Standards/Requirement Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

The Order Compliance Self-Assessment program is an ongoing and viable program supporting line management needs. (Standards/Requirements Implementation Assessment Instruction)

Approach

Record Review: Confirm that the noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance and if the actions described in the Requests for Approvals have been adequately addressed for the facility/activity.

Interviews: Interview operations managers and operations personnel to assess their understanding of compensatory measures that are in place for existing non-compliances and actions in progress to gain compliance.

Shift Performance: Observe and assess the adequacy of any compensatory measures that are in place during the conduct of evolutions and drills.

OBJECTIVE (CO-29)
MG.5 A program is established to promote a site-wide safety culture. **(CORE REQUIREMENT #14)**

Criteria

An increased awareness and understanding of criticality safety and conduct of operations principles has been achieved. Training done as a corrective action for the shutdown initiating events has been responsive to the causal factors. (5480.1B, Ch. IX; 5480.29, para 9.a.)

Approach

Record Review: Spot check that the training done as a corrective action for the shutdown initiating events has been responsive to the causal factors. Review any processes used by management to continue to maintain and communicate these safety priorities.

Interviews: Interview a cross-section of personnel to spot check for the level of awareness and understanding of criticality safety and conduct of operations. Compare the observed level of awareness and understanding with description of the causal factors.

Shift Performance: During shift performance and drills monitor the level of supervisory and operator concern for criticality safety and conduct of operations principles.

OBJECTIVE (CO-30)

MG.6 The results of the responsible contractor "Readiness Assessment" are adequate to verify the readiness of hardware, personnel, and management programs for safe operations. The Y-12 Site Office has reviewed the contractor Readiness Assessment and management self-assessment and completed a management self-assessment which verifies the readiness of the Y-12 Site office to oversee resumed facility operations. **(CORE REQUIREMENT #17)**

Criteria

The contractor Readiness Assessment and management self-assessment were adequately executed and it is confirmed that the scopes were properly established. A sufficient breadth of activities, facilities, and management systems were reviewed. The contractor Readiness Assessment met the intent of the contractor Plan-of-Action, Implementation Plan, and Criteria and Review Approach Documents as written. Corrective actions and closure packages for restart findings have been verified to formally document, manage and resolve the Readiness Assessment restart findings. The contractor has issued a Readiness-to-Proceed Memorandum which is endorsed by the Y-12 Site Office and transmitted to the Restart Authority. (5480.31, para 9.b. (9) and (10))

Approach

Record Review: Review the contractor Readiness Assessment plan, findings, recommendations, implementation plans, and schedules to ensure they are complete in scope and adequate in detail. Verify the rationale for contractor acceptance of any noncompliance items. Decide whether the contractor has systematically analyzed findings for root causes and generic implications. Review the qualifications of the contractor Readiness Assessment team. Verify the contractor Readiness Assessment met the intent of the contractor Plan-of-Action, Implementation Plan, and Criteria Review and Approach Documents as written. (Input should be solicited from each functional area for this objective.) Review the contractor management self-assessment plan, findings, recommendations, and schedules to ensure they are complete in scope and adequate in detail. Review the qualifications of the management self-assessment team. Decide whether the contractor has adequately verified readiness assessment prerequisites and core objectives as identified in the Plan of Action and verified completion of other commitments in Document Y/AD-623, *Plan for Continuing and Resuming Operations*.

Interviews: Interview contractor Readiness Assessment team and Management Self-Assessment team leaders to verify the adequacy of their assessments.

Shift Performance: Select previously identified findings to determine if corrective actions have been effective in resolving the issue.

OBJECTIVE (CO-31)
MG.7 Y-12 Site Office facility representatives are assigned and qualified to oversee and provide direction and guidance to the contractor. **(CORE REQUIREMENT #16)**

Criteria

Qualification of the Oak Ridge Y-12 facility representatives is in accordance with locally developed interim qualification standards. Long-term plans are developed for eventual qualification. There are sufficient numbers of facility representatives for oversight of conduct of operations and criticality safety. If a facility representative has not completed interim qualification, a mentor is assigned as a compensatory measure and mentoring requirements are defined and adequate. (DOE-STD-1063-93, para 4 and 5; 5480.20A, para 9, Ch. I, para 7, and Ch. 4; 5480.19, para 3.a.; Order 232.1, para 5.d, 8, and 9.h)

Approach

Record Review: Discuss the facility representative training and qualification review results with the Readiness Assessment team members evaluating the training area. Review facility representative's assignments. Review Facility Occurrence Report process.

Interviews: Interview Y-12 Site Office facility representatives to determine the degree of understanding of operations, safety envelope, past incidents and occurrences, conduct of operations principles, and stop work authority.

Shift Performance: Perform a walk through of the facility, with a qualified facility representative, to determine the facility representative's understanding of criticality safety and conduct of operations. Observe any interaction of the Oak Ridge Y-12 Site personnel during shift operations for related knowledge and required action.

OBJECTIVE (CO-31)
MG.8 A Y-12 Site Office management self-assessment has been completed and has verified the readiness of the Y-12 Site Office to oversee the resumed facility operations. **(DP-1 PREREQUISITE CONCERN)**

Criteria

The management self-assessment has verified the post-operation findings from applicable special operation requests that have been determined to be prestart findings have been closed. Restart actions planned in response to Defense Nuclear Facilities Safety Board Recommendation 94-4 have been reviewed for pre-resumption items and any identified actions are completed. The Phase II items identified as restart issued in document, "Y-12 Site Office Plan for Line Assessment of Resumption of Activities and Programmatic Improvements at the Y-12 Plant," have been dispositioned and required prestart actions completed.

Approach

Record Review: Review the results of the Y-12 Site Office management self-assessment.

Interviews: Interview the team leaders and selected Y-12 Site Office personnel who participated in the management self-assessment.

Shift Performance: None.

OPERATIONS (OP)

OBJECTIVE (CO-18)
OP.1 There are sufficient numbers of qualified personnel to support safe operations. **(CORE REQUIREMENT #13)**

Criteria

Minimum staffing requirements have been established for operations personnel, supervisors, shift technical advisors, and managers. These staffing levels are met and are consistent with the safety analysis report requirements and assumptions. (Facility Safety Basis Documentation, 5480.20A, para 9)

Sufficient numbers of qualified operations personnel, supervisors, shift technical advisors, and managers are available to carry out facility operations. Staffing levels are consistent with the technical safety requirements. (Facility Safety Basis Documentation, 5480.20A, para 9)

Approach

Record Review: Compare Operational Safety Requirements and Limiting Condition for Operations staffing requirements, including both normal and postulated emergency conditions, with qualified personnel assignments to assess the ability of the facility to field the required personnel.

Interviews: Interview operators and supervisors to ensure they understand their responsibilities and roles with regards to minimum staffing requirements during all phases of facility operations.

Shift Performance: Assess staffing levels while observing drills and routine evolutions to determine their adequacy and ability to satisfy administrative and safety basis requirements.

OBJECTIVE (CO-17)
OP.2 Level of knowledge of operations personnel is adequate based on reviews of examinations, examination results, selected interviews and observation of work performance. **(CORE REQUIREMENT #3)**

Criteria

The level of operator fundamental knowledge is adequate to operate safely. (5480.19 Ch. XIII; 5480.20A, Ch. I, section 7 and 8, and Ch. IV, section 5).

Operations personnel retain a practical and adequate understanding of facility systems and operations. These personnel also give adequate attention to and retain an adequate knowledge of health, safety and environmental protection issues. (5480.19, Ch. XIII; 5480.20A, Ch. I, Section 7 and 8, and Ch. IV, Section 5).

Operators demonstrate the ability to carry out normal, abnormal, and emergency procedures. (5480.19 Ch. XIII; 5480.20A, Ch. I, Section 7).

Operators demonstrate a working knowledge of facility systems and components related to safety. (5480.19 Ch. XIII; 5480.20A, Ch. I, Section 7)

Approach

Record Review: None. (Review of examinations to decide if they adequately test the operator's understanding of technical fundamentals, facility systems, and operating procedures will be done under the Training [TR] area)

Interviews: Interview operators and supervisors to assess their understanding of facility processes, procedures, and fundamentals of disassembly/assembly as they relate to the restart effort. Determine if these personnel have an adequate knowledge of health, safety, and environmental protection issues. Verify the level of worker understanding and adequate use of applicable operating procedures, Criticality Safety Approvals and Operational Safety Reviews.

Shift Performance: Observe drills, simulations, routine evolutions and normal operations to assess technical understanding and ability of the operators and supervisors to conduct their duties and to safely operate systems and components according to approved plant procedures.

OBJECTIVE (CO-19)
OP.3 The implementation status for Department of Energy Order 5480.19, "Conduct of Operations Requirements for Department of Energy Facilities," is adequate for operations. **(CORE REQUIREMENT #12)**

Criteria

Program requirements have been developed and issued for the topics addressed in the Order. (5480.19, para 5.a.)

Operations personnel demonstrate the principles of the conduct of operations requirements during the shift performance period. Adequate performance will be demonstrated in the following areas of the Order:

- Operations organization and administration;
- Shift routines and operating practices;
- Control of on-the-job training;
- Investigation of abnormal events;
- Control of equipment and system status;
- Required reading;
- Timely orders to operators; and
- Operator aid posting.

(Note: Procedural aspects of Department of Energy Order 5480.19, Ch XVI, are covered under Criteria Review and Approach Document PR.1) (5480.19, para 5.a. and b.)

Approach

Record Review: Review recently completed operations logs, shift turnover documents, and other plant records of note to assess compliance with conduct of operations principles. Review documentation of required shift operating practices, directives for control of on-the-job training, procedures for investigation of abnormal events, procedures for control of equipment and reporting of system status, evidence that required reading is being read, review of logs indicating timely orders to operators, and operator aid posting. Review the written directives for placement of operator mentors in the operating areas, where full compliance with the conduct of operations requirements cannot be met prior to resumption of operations.

Interviews: Interview operators and supervisors to assess their understanding of the conduct of operations principles and their personal responsibilities in the performance of their duties for safe operations. In those areas where conduct of operations requirements cannot be met prior to resumption of operations, interview qualified operator mentors and determine their level of experience and training to act as mentors. Interview operators to check their understanding of the control of equipment and verification of system status, shift routines, operating practices, operations organization and operations administration.

Shift Performance: While observing evolutions and drill response, determine if the facility is effectively implementing the conduct of operations requirements. Attend shift turnovers, incident critiques, and pre-job briefings. Observe operator rounds, panel walk downs, required reading use, procedure use, response to alarms, and control of system status. Observe briefings for operator mentors and preparation for shift operations.

OBJECTIVE (CO-20)
OP.4 Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements.
(CORE REQUIREMENT #14)

Criteria

Site programs actively promote safety through a broad range of activities possibly including, but not limited to, safety bulletins, lessons learned briefings and/or employee concerns programs. (5480.1B, Ch. IX; 5480.29, para 9.a.)

Contractor personnel will exhibit awareness of the safety-related policies and procedures necessary for daily operations. Personnel will exhibit awareness of requirements for safe operations as set forth in Criticality Safety Approvals, Operational Safety Reviews, and appropriate operating procedures. (5480.19)

Approach

Record Review: Verify the existence and use of mechanisms (policies, procedures, etc.) which promote the identification and promulgation of safety concerns to employees and provide the employee the opportunity to report safety issues.

Interviews: None (Note: Interviews within the scope of this CORE OBJECTIVE are covered within Criteria Review and Approach Documents OP.1, OP.2 and OP.3, covering operations and operations support personnel level of knowledge.)

Shift Performance: None (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and the level of knowledge of operations support personnel.)

OBJECTIVE (CO-28)

OP.5 An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators. **(CORE REQUIREMENT #10)**

Criteria

The appropriate restart programs are developed for the identified processes and the processes are fully operable to perform their intended function. The restart programs document the operability of the equipment that has been in the stand-down mode, the usefulness of the procedures, and the relevance of the training to the intended use of the restarted equipment. (5480.31, Attachment II, para 10)

Approach

Record Review: Evaluate the status of actions under the Implementation Plan. Ensure a phased approach to normal operations and inclusion of procedures, operator qualification and equipment startup testing as required.

Interviews: None (Note: Interviews within the scope of this CORE OBJECTIVE are covered within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and operations support personnel level of knowledge.)

Shift Performance: None (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents 1-3, covering operations and the level of knowledge of operations support personnel.)

OBJECTIVE (CO-27)

OP.6 A baseline compliance status review of Department of Energy Orders 5000.3B and 5480.19 has been performed. Noncompliance items have been addressed. Documentation of compensatory measures is complete and are understood by contractor and Department of Energy Y-12 Site Office personnel. **(CORE REQUIREMENT #7)**

Criteria

Noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board, especially Department of Energy Orders 5000.3B and 5480.19, have approved schedules for gaining compliance and if the actions described in the Request for Approvals have been adequately addressed for the facility/activity. Operations managers and Department of Energy Y-12 Site Office personnel have reviewed the compensatory measures and corrective actions taken to address the nonconformances. A program for periodic management assessment of the continued need and adequacy of compensatory measures is implemented. (Y/AD-623, Standards/Requirements Implementation Assessment Instruction)

Approach

Record Review: Review the order compliance package for Department of Energy Orders 5000.3B and 5480.19, including the applicable Compliance Schedule Agreement, exemptions and compensatory measures. For identified Request for Approvals, verify schedule commitments have been met and compensatory measures identified. Verify that documentation of compensatory measures is complete and that there is a documented program for periodic assessment of compensatory measures.

Interviews: For order requirements not fully implemented, determine if management understands areas of noncompliance and actions necessary for full implementation. In addition, determine if management is aware of any required compensatory measures associated with these noncompliances. Interview selected Department of Energy Y-12 Site Office personnel to determine their understanding of compensatory measures, when they are required, and when they can be removed.

Shift Performance: None. (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and the level of knowledge of operations support personnel.

PROCEDURES (PR)

OBJECTIVE (CO-7, CO-19)

PR.1 There are adequate and correct procedures for operating systems and utility systems. **(CORE REQUIREMENTS 1, 15, and 18)**

Criteria

Criticality Safety Approvals and operating procedures applicable to disassembly/assembly activities (refer to "Disassembly/Assembly Procedures (U)", dated January 4, 1996) are technically accurate, consistent with each other, and incorporate the appropriate safety limits. A viable system for the control of the issuance and use of procedure revisions by the field and by the training organizations exists. (5480.19, Ch. XVI; 5700.6C, para 9.b.(2)(a); 4330.4B, Ch. II, Section 6, 5480.22, para 9)

Approach

For Criticality Safety Approvals contained in Appendix II of the Oak Ridge Y-12 Site's Readiness Assessment Plan-of-Action, and procedures listed in document "Disassembly/Assembly Procedures", dated January 4, 1996, review validation, walk down, and reviewer comments for recent procedure changes on safety systems. Review procedures for implementation of the safety envelope. Assess the adequacy of the review and approval process for procedures and changes to procedures. Review documented basis for test acceptance criteria. Assess the currency of procedures and verify that current configuration of safety systems is reflected in operations, maintenance and surveillance procedures.

Interviews: Interview operators and supervisors to assess their understanding of the temporary procedure change process, and how they verify the latest approved revision of a procedure. Interview support staff personnel responsible for procedure writing and revision to assess their understanding of procedure control requirements, validation process, and implementation of safety requirements. Interview operators and supervisors to assess their understanding of site procedure compliance policy. Interview personnel from the field and training organizations to ensure that they understand the system for control of the issuance and use of procedural revisions.

Shift Performance: While observing evolutions and drill response, determine if the facility is operating with current, approved procedures (with valid changes if applicable) which allow full compliance and execute the required function. Determine if the facility procedures are adequate in content, level of detail, and acceptance criteria, and if they properly implement safety requirements. If temporary procedure changes are necessary, assess the steps taken by an operator and his supervisor in the review and approval process. Verify that procedures used by the operators are properly controlled to ensure only the latest revision is used. Verify that operators are following site procedure compliance policy.

SAFETY ENVELOPE VERIFICATION (SE)

OBJECTIVE (CO-4)
SE.1 There are adequate and correct safety limits for operating systems. **(CORE REQUIREMENT #1)**

Criteria

The Operational Safety Requirements for disassembly/assembly facilities are technically accurate and consistent with the physical facility configuration. The designated equipment and systems are present as described in the Operational Safety Requirements and the Operational Safety Requirements can be technically accomplished. Compliance with the applicable Operational Safety Requirements are verified. (5480.22, para 9.e, 5480.19, Ch. XVI)

Approach

Record Review: Review several safety requirements and decide if the associated operating, and maintenance procedures correctly set up the limiting conditions. Verify these limits are specified in sufficient detail and rigor to allow unambiguous measurements (clear pass/fail criteria). Verify that the Operational Safety Requirements for the facilities are technically accurate and consistent with the physical facility configuration. Verify compliance with the applicable Operational Safety Requirements.

Interviews: Interview a cross section of management, operations, and maintenance personnel to ensure that personnel are knowledgeable in the significance of the safety limits and have a general knowledge of their basis.

Shift Performance: Observe the performance of surveillances and operator rounds to determine if safety system parameters used to verify compliance with safety requirements can be accurately verified, and that procedures adequately provide for prompt corrective action and communications upon the identification of an out of normal condition. Verify safety system configurations through walk downs. Verify that the designated equipment and systems are present as described in the Operational Safety Requirements and that the Operational Safety Requirements can be technically accomplished.

OBJECTIVE (CO-10)
SE.2 A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, including safety-related process systems and safety-related utility systems. **(CORE REQUIREMENT #5)**

Criteria

Confirmation of continued compliance with safety requirements, including clearly defined surveillance intervals and periodic self-assessments, is required by procedures. The facility is in compliance with these requirements. (5480.22, para 9, 10, Attachment I, Background, 5480.23, para 8, Attachment I, Section 4)

Note: The scope of the Readiness Assessment does not include an assessment of the maintenance Recall-A and calibration programs and procedures themselves, but will

verify entry of applicable systems in the appropriate Recall/calibration program.

Approach

Record Review: Review completed periodic condition and operability reconfirmations and verify they have been performed according to the schedule and requirements of the Operational Safety Requirements and/or Criticality Safety Approvals. Through review of these records, verify the status of the safety systems and safety-related process system components in the maintenance Recall-A program and other inspection and calibrations programs are maintained and operational impacts of status changes are understood.

Interviews: Interview personnel associated with the program for periodic condition and operability reconfirmations. Also, interview personnel who manage the safety systems and safety-related process system components in the maintenance Recall-A program, other inspection, and calibration programs to determine how well they understand and use these programs.

Shift Performance: Walk down one or more safety-related systems to assess operability and condition. Ensure that the status is consistent with the condition specified in the building's vital safety system status board (or other method of status control). Observe the conduct of a periodic condition and operability reconfirmation.

OBJECTIVE (CO-11)
SE.3 Safety system and other instruments which monitor Technical Safety Requirements are monitored for calibration. **(CORE REQUIREMENT #5).**

Criteria

Calibration has been properly performed at the required frequency for all safety systems. The calibration status of the safety systems and safety-related process systems components meets operational requirements. (Note that the Oak Ridge Y-12 Site has Operational Safety Requirements instead of Technical Safety Requirements.) (5480.22, para 9, 10).

Approach

Record Review: Review the calibration tracking system to assess the mechanism used for scheduling, performing, reporting results and dispositioning deficiencies. Review the safety systems and safety-related process system components to determine if each safety system has an adequate calibration process. Verify that the current status supports the Oak Ridge Y-12 Site Operational Safety Requirements.

Interviews: Interview personnel associated with the calibration program to assess their understanding of program requirements and responsibilities.

Shift Performance: Observe performance of the safety system calibration process to assess operability and condition, and that the status is consistent with the condition specified for safety system operation.

OBJECTIVE (CO-12)
SE.4 All safety and safety-related utility systems are currently operational and in a satisfactory condition. **(CORE REQUIREMENT #5)**

Criteria

The operational status and condition has been determined by satisfactory evaluation of the calibration and surveillance status for the safety systems. (5480.22, para 9, and 10)

Approach

Record Review: Review the safety systems tracking program to assess the mechanism used for monitoring, testing, reporting testing results and dispositioning deficiencies. Review the safety systems to decide if safety system operations are within the limits define by the Operational Safety Requirements and Criticality Safety Approvals. Review outstanding safety system and safety-related process system deficiencies identified through the corrective maintenance program, preventive maintenance program, test program, or other reporting processes to assess the condition of facility systems to support safe operations.

Interviews: Interview personnel associated with the safety system operation to assess their understanding of program requirements and responsibilities. Interview operations and management personnel to determine if the safety system's status is effective for safe operations.

Shift Performance: Walk down and observe the performance of safety systems to assess operability and condition, and if the status is consistent with the condition specified for safe operation.

OBJECTIVE (CO-27)
SE.5 A baseline compliance status review of Department of Energy Orders 5480.22 and 5480.23 has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All noncompliance issues are adequately addressed by Department of Energy approved Compliance Schedule Agreement or exemptions. The Compliance Schedule Agreements include an adequate technical basis and schedule for attaining compliance. (Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review order compliance packages for the listed orders, including all applicable Compliance Schedule Agreements and Request for Approvals, exemptions, and compensatory measures. For identified Requests for Approvals, verify schedule commitments have been met and compensatory measures identified.

Interviews: If these orders are not fully implemented, interview management personnel to ensure they are aware of the noncompliance(s) and actions necessary to fully carry out the order requirements along with any interim compensatory measures. This includes both the site-level programmatic and facility-level compliance and adherence-based assessments.

Shift Performance: Where appropriate, observe the implementation of any specified compensatory measures within the facility to determine their effectiveness.

TRAINING (TR)

OBJECTIVE (CO-13)

TR.1 Training and qualification programs for Disassembly/Assembly operations, quality, and technical support personnel have been established, documented, and implemented to cover the range of duties required to be performed. **(CORE REQUIREMENT #2)**

Criteria

Procedures are developed and implemented that describe the qualification process, including examination requirements for qualification and/or certification of disassembly/assembly operations, quality, and technical support personnel. Procedures describing requalification, maintenance of proficiency, granting of exceptions and extensions, alternatives to educational requirements, remediation and evaluations by facility and training management are developed and implemented. (5480.20A, Ch. I, para 7)

Goals, objectives, and plans are in place to describe the implementation of the training and qualification programs.

Training programs incorporate formal on-the-job and hands-on evaluation of skills.

The qualification program includes requirements for successful completion of written, oral, and operational evaluations for operations and maintenance personnel.

Procedures are in place to ensure that non-resident personnel will receive the proper training for unescorted access to disassembly/assembly facilities and are current in their training requirements.

Approach

Record Review: Review training and qualification records for disassembly/assembly operations, quality, and technical support personnel, including results of written, oral and operational evaluations, to ensure the training program is being formally administered and controlled.

Review training records to ensure they are maintained in an auditable manner and support management information needs by providing required data on each individual's training participation, performance, and qualification/certification.

Review trainee feedback forms, training evaluations of lessons learned from operating experiences, and formal training program reviews to verify feedback is addressed in a formal manner. Review the evaluation/self assessment program for involvement by facility and training management in program, instructor (classroom and on-the-job), and training materials assessment.

Review the continuing and remedial training program for adequacy.

Review the written goals and objectives related to the implementation of the training and qualification process and ensure they are documented in strategic plans, mission statement and that the goals and objectives adequately address the current issues that are important to both Department of Energy and contractor management.

Interviews: Interview training personnel to decide if they have sufficient experience and qualifications for assessing disassembly/assembly operations, quality, and technical support personnel.

Shift Performance: Attend oral or operational evaluations of operator, supervisor, or operations support personnel. Verify that personnel demonstrate knowledge of activities and requirements that were included in their training program. Evaluate an initial or continuing training classroom presentation or field training activity for technical and administrative adequacy. Evaluate the degree to which on-the-job training is used to reinforce classroom activities.

OBJECTIVE (CO-35)
TR.2: The training and qualification programs encompass the range of duties and activities required to be performed. **(CORE REQUIREMENT #2 and 9)**

Criteria

The tasks required for competent job performance are identified and documented through a systematic analysis of job requirements. The training program is based on the results of the analysis. Learning objectives are derived from this analysis.

Requirements for continuing training have been adequately defined and programs have been developed. Continuing training includes conduct of realistic drills to maintain proficiency in responding to abnormal and accident situations, including those involving radiological hazards. (5480.20A, Ch I, para 7.d)

Training programs for disassembly/assembly, quality and technical support personnel include training on the requirements contained in the approved operating basis for the facility. (5480.20A, Ch I, Para 7)

Training programs for operations and maintenance personnel emphasize the importance of compliance with procedures and safety requirements. (5480.20A, Ch I, Para 7)

The training department uses post-training feedback, internal evaluations (self assessment), and operating experience to modify the training program when needed. This includes:

- Using feedback on training effectiveness from trainees and supervisors,
- Incorporating feedback from operating experience at the site and from other Department of Energy sites,
- Conducting formal reviews of training effectiveness,

- o Incorporating of comments from line management self-assessments and other audits.

Records demonstrate that facility representatives assigned to cover facility operations are qualified.

Approach

Record Review: Review disassembly/assembly and quality personnel lesson plans for incorporation of safety requirements, operational safety requirements, and procedure compliance. Review trainee feedback forms, training evaluations of lessons learned from operating experiences, and formal training program reviews to verify feedback is addressed in a formal manner. Review the continuing training program plan and drill schedule to verify adequacy in supporting safe facility operations.

Review completed facility representative Qual-Cards, oral and written exam results proving qualification in accordance with the Oak Ridge Y-12 Site qualification guidelines.

Review training programs to ensure that subject matter experts, line management, and training staff develop and maintain a valid facility-specific task list as the basis for the training program; the facility specific list of tasks selected for training is reviewed periodically and updated as necessary by changes in procedures, facility systems/equipment, job scope, advances in technology, and Department of Energy or other appropriate training guidelines are used for selecting,sequencing and verifying training program structure and content.

Review examinations (written and oral) and performance evaluations to verify that they are based on learning objectives, are reviewed by subject matter experts, are changed frequently to avoid compromise and are formally controlled.

Interviews: Interview training personnel responsible for continuing and drill scenario development and implementation. Interview personnel responsible for establishing training needs for disassembly/assembly, quality and technical support personnel.

Shift Performance: Observe operator and maintenance support personnel response to drills. Evaluate a continuing training classroom lecture simulator training session or field training activity for technical and administrative adequacy.

OBJECTIVE (CO-14)
TR.3 The technical and management qualifications of contractor personnel responsible for facility operations are adequate. **(CORE REQUIREMENTS 13 and 19)**

Criteria

The technical qualifications of contractor personnel involved in disassembly/assembly activities, including management who are responsible for facility, up to the Manager, Nuclear Operations are verified. Entry-level requirements are established for each operations position, as applicable, including minimum education, experience, technical, and medical requirements.

These requirements also include managers who are responsible for facility, up to the Manager Nuclear Operations. (5480.20A, Ch. I, para 9).

The applicable non-reactor nuclear facility managers, supervisors, operators, technicians, and technical support personnel have the required minimum education and experience levels. (5480.20A, Attachment IV)

Approach

Record Review: Review the procedures or policies that describe the personnel selection and entry-level requirements to ensure these requirements address the minimum physical attributes a trainee must possess, and the minimum educational, technical and experience requirements necessary for the employee to meet job requirements according to the requirements of the Oak Ridge Y-12 Site Training Implementation Matrix.

Review training records for the applicable non-reactor nuclear facility managers, supervisors, operators, technicians, and technical support personnel and verify the required minimum education and experience levels are met. Review training records for managers to determine if they have received adequate training in disassembly/assembly activities. Review training and qualification requirements for those mentors in place as compensatory measures.

Interviews: Interview operators and supervisors to ensure they understand the minimum staffing requirements for all phases of facility operations. Verify that the training and qualification of personnel are at a level sufficient to support resumption.

Shift Performance: Assess staffing levels while observing drills and routine evolutions to determine their adequacy. Verify they satisfy administrative and safety basis requirements.

OBJECTIVE (CO-16)
TR.4 Procedures in use at the facility have been reviewed for potential impacts on training and qualification. Training has been performed to the latest revision of procedures. **(CORE REQUIREMENT #18)**

Criteria

Training has been completed and documented for the latest revisions of procedures performed by disassembly/assembly, quality and technical support personnel. (5480.20A, Ch. I, para 7)

Training programs incorporate formal on-the-job training and hands-on evaluation of skills based on the latest revisions of procedures performed by disassembly/assembly and quality personnel.

Approach

Record Review: Review the process used to evaluate disassembly/assembly, quality

and technical support personnel training needs based on procedure revisions. Review lessons plans, and supporting examinations. Determine if lesson plans accurately reflect procedure changes. Review the examinations for appropriate scope and content. Review the degree to which on-the-job training and hands-on evaluations for operations and maintenance personnel are used to reinforce classroom activities.

Interviews: Interview training personnel to determine their involvement with procedure changes affecting lesson plans. Interview supervisors to determine how they incorporate procedure revisions into work planning.

Shift Performance: Observe disassembly/assembly, quality and technical support personnel in the performance of on-the-job training. Observe classroom training or a field training activity. During observation of operations using procedures, verify proper conduct and understanding of the procedures by the operators.

OBJECTIVE (CO-27)

TR.5 A baseline compliance status review of Department of Energy Order 5480.20A has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance.

Compensatory measures specified in the Compliance Schedule Agreements are adequately understood and implemented by operations managers.

Approach

Record Review: Review the order compliance package for Department of Energy Order 5480.20A, including all applicable Compliance Schedule Agreements, exemptions and compensatory measures. For identified Request for Approvals, verify schedule commitments have been met and compensatory measures identified.

Interviews: If this Order is not fully implemented, interview management personnel to ensure their awareness of the noncompliance(s) along with actions necessary to fully implement the order requirements, and all interim compensatory measures. Ensure operations managers have reviewed the compensatory measures and corrective actions taken to address the non-conformance for site level programmatic and facility-level compliance and adherence-based assessments.

Shift Performance: Where appropriate, observe the implementation of any specified compensatory measures within the facility to determine their effectiveness.

OBJECTIVE (CO-22)

TR.6 A routine operations drill program, including program records, has been established and implemented **(CORE REQUIREMENT #9)**

Criteria

An effective routine (non-emergency) operations drill program has been established to assure operator readiness and knowledge of appropriate responses to indicators. Drills and exercises are conducted and an adequate response capability is demonstrated to exist. (5480.19, Ch. VI, 5480.20A, Ch. I, Section 7)

Approach

Record Review: Review the drill records which describe the routine drills that have been conducted in the past year. Determine if the drill scenarios were adequate and if the requisite number of drills have been conducted to fully test personnel and, procedures and equipment in a broad range of facility operations. Determine if lessons learned from drills are factored into subsequent drills and training.

Interviews: Interview personnel responsible for the development and conduct of drills to evaluate their understanding of the purpose of the drill program, and their ability to execute it.

Shift Performance: Attend and assess drill preparations, pre-briefs, conduct and critiques. Determine if operational drills test operators and operations support personnel with realistic and challenging scenarios. Evaluate whether an adequate response capability exists.

APPENDIX 3

DETERMINING PRE-START/POST START FINDINGS

APPENDIX 3

DETERMINING PRE-START/POST START FINDINGS

This checklist will be used by the Operational Readiness Review team to evaluate if an issue must be corrected prior to startup.

A. Initial Screening

1. Does this issue involve a safety system?

2. Does this issue involve processes, functions or components identified in the Technical Safety Requirements/Operational Safety Requirements or nuclear safety control procedures?

3. Does this issue involve potential adverse environmental impact exceeding regulatory or site specific release limits?

4. Does this issue impact non-safety processes, functions or components which could adversely impact safety related processes, functions or components?

5. Is this issue non-compliant with a Lockheed-Martin Energy Systems, Inc. or Department of Energy - Oak Ridge Operations Office approved startup document?

6. Does this issue indicate a lack of adequate procedures or administrative systems?

7. Does this issue indicate operational or administrative non-compliance with procedures or policy?

8. Has this issue occurred with a frequency that indicates past corrective actions have been lacking or ineffective?

9. Does this issue require operator training not specified in existing facility training requirements?

10. Does this issue involve a potential adverse impact on worker safety?

If the response to any of the above is yes, further evaluation, in accordance with the issue impact criteria below is required. If the response to all of the above is no, the issue may be resolved after restart.

B. Issue Impact

1. Does the loss of operability of the item prevent safe shutdown, or cause the loss of essential monitoring?

2. Does the loss of operability of the item require operator action to

prevent or mitigate the consequences of events described in the Safety Analysis?

3. Does the loss of operability of the item cause operation outside the Technical Safety Requirements/Operational Safety Requirements, or Safety Analysis?

4. Does the loss of operability of the item result in a reduction of the margin of safety as described in the Safety Analysis?

5. Does the issue indicate a lack of control which can have a near term impact on the operability or functionality of safety related systems?

6. Does the issue involve a violation of worker safety or environmental protection regulatory requirements?

If the response to any of the above questions is yes, the item should be considered a startup item.

APPENDIX 4
FORMS 1 AND 2

RA ASSESSMENT FORM 1
Criticality Safety

FUNCTIONAL AREA: CS	OBJECTIVE 1, REV. 0 DATE: March 6, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety. **(CORE REQUIREMENT #11)**

Criteria

The functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization are adequately defined, understood and effectively implemented. This includes confirmation that nuclear criticality management and staff clearly understand and accept their responsibilities for control of safety. (5480.19, para 4)

The functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of personnel assigned to augment/strengthen the criticality safety organization have been defined. The conditions under which temporary (non-permanent and/or borrowed personnel) can be removed have been documented. (5480.19, Ch. I and III)

Approach

Record Review: Review the disassembly/assembly operations records to ensure that the functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization are adequately defined for disassembly/assembly functions. Focus should be on disassembly/assembly operations and change since the Receipt, Storage, and Shipment Readiness Assessment. Review the written definitions of the functions, assignments, responsibilities, reporting relationships, specific qualifications, and required experience of temporary (non-permanent and/or borrowed personnel) assigned to the nuclear criticality safety organization. The conditions under which these personnel can be removed is documented. (5480.19 Ch. I and III)

Interviews: Check that management understands and has implemented the functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization specific to disassembly/assembly, ensure communications between Criticality Safety Organization and line management are clear. Verify that individuals understand their assignments, responsibilities, and reporting relationships and conditions under which temporary personnel may be released.

RA ASSESSMENT FORM 1
Criticality Safety

Shift Performance: Observe how management communicates and has implemented control of safety.

Records Reviewed:

- Organization chart, "Nuclear Criticality Safety Department," dated 2/20/96
- Roster, Nuclear Criticality Safety Department, dated 5/16/95
- "Roles and Responsibilities in the Nuclear Criticality Safety Department," Y/DD-680, 5/9/95
- "List of Qualified Personnel," Y/DD-587, Rev. 13, 2/9/96
- "Qualification Program Nuclear Criticality Safety Department", Y/DD-694, Rev.1, 8/29/95
- "Training Implementation Nuclear Criticality Safety Department", Y/DD-696, Rev.1, 8/29/95
- Resumes and training records for key member of the Nuclear Criticality Safety Department supporting D/A activities
- Letters, K.J. Carroll to distribution, appointing criticality safety engineers to various committees and positions, 4/95 to 8/95
- K.J. Carroll, "Oak Ridge Y-12 Plant Nuclear Criticality Safety Improvement Action Plan," Y/DD-699, 8/25/95
- "Nuclear Criticality Safety Program," Procedure No. Y70-150, 8/25/95 (effective 9/24/95) and Change Directive Y70-150-1 dated 9/8/95
- "Criticality Accident Alarm System," Procedure Y70-151, 8/21/92 and Change Directive dated 7/28/94
- "Mock-Ups", Procedure Y70-153 dated 12/20/95
- "Nuclear Criticality Safety Standards for Identification and Limits Posting," Procedure 70-159, 12/15/89 and Change Directives 70-159-1 dated 2/16/95 and Change Directive 70-159-2 dated 11/2/95
- "Criticality Safety Approval System," Procedure No. Y70-160, 8/23/95 (effective 9/24/95) and Change Directive Y70-160-1 dated 9/8/95
- "Nuclear Criticality Safety Training Program," Procedure No. Y70-162, 7/6/94 and Change Directives Y70-162-1 and 2 dated 10/28/94 and 1/5/94 (actually 1/5/95), respectively
- "General Nuclear Criticality Safety Requirements", Procedure Y70-01-150, 3/15/95 and Change Directives Y70-01-150-01 to Y70-01-150-06, 5/18/95 to 1/31/96.
- "Document Control", Procedure Y10-189
- "Nuclear Criticality Safety Analysis, Approval, and Control System," Procedure No. Y50-66-CS-325, 2/3/95 and Change Directives Y50-66-CS-325-1, 2, and 3 dated 3/30/95, 4/5/95, and 4/11/95, respectively.
- "Nuclear Criticality Safety Incidents," Procedure No. Y50-66-CS-327, 4/24/94
- "Quality Assurance for Nuclear Criticality Safety Computer Calculations," Y50-66-CS-328, 8/10/93
- "Nuclear Criticality Safety Department External Monitoring Program", Procedure No. Y70-66-CS-330, dated 11/22/95
- G.R. Handley et al, "The Y-12 Plant Nuclear Criticality Safety Program Description," Y/DD-500, 2/24/93

- P.R. Wasilko to R.K. Roosa, "Management Self Assessment Report for Disassembly and Assembly," 1/5/96
- "Y-12 Site Office Restart Team Assessment of the Disassembly and Assembly Activities at the Y-12 Plant", 2/23/96
- T.R. Butz to R.J. Spence, "Corrective Action Plan for Task 2 Assessment: Defense Nuclear Facilities Safety Board (DNFSB) 94-4, 1/30/96
- T.R. Butz to R.J. Spence, "Corrective Action Plan for Task 3.2 Assessment: Defense Nuclear Facilities Safety Board (DNFSB) 94-4, 1/30/96
- "Corrective Action Plan for Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-4 Task 4 Assessment of Conduct of Operations at Y-12", Y/AD-623, 1/30/96
- C.C. Edwards, "Nuclear Criticality Safety Management Plan for 1995 Resumption," Y/DD-669
- "Management Plan for Assessing Y-12 Plant Criticality Accident Alarm System Coverage," Y/DD-673, Rev.1, 1/11/96
- "Charter for the Nuclear Criticality Safety (NCS) Independent Technical Review Board (ITRB)," Y/DD-675, 6/15/95
- K.J. Carroll, "Interim Plan to Correct Nonconformances Found During the 1994 Walkdowns of Criticality Safety Approvals," Y/DD-677, Rev. 1, 4/5/95
- K.J. Carroll, "Management Plan for Criticality Safety Approvals (CSAs) for Continued Operations," Y/DD-683, 5/5/95
- "Nuclear Criticality Safety Incident Reports" for 4/94 - 3/95
- Superintendent, Nuclear Criticality Safety Department to distribution,
  - "This Standing Order delineates the requirements for issuance of Standing Orders," Standing Order SO-9110-95-01, 7/10/95
  - "To establish the requirements and standards in conducting the annual Operational Reviews as required by ANSI/ANS 8.1," Standing Order SO-9110-95-02, 7/11/95
  - "This Standing Order discusses the need for Group Leaders to ensure that the personnel they assign to work items understand their responsibilities and are suited to the work assigned," Standing Order SO-9110-95-04, 7/12/95
  - "This Standing Order defines the requirements and method for documenting all NCSD technical direction or advice to Operations, resulting from Conferences or Conversations," Standing Order SO-9110-95-05, 9/15/95
  - "NCSD Monthly On-Call List", Standing Order SO-9110-95-08, 9/26/95
  - "NCSD Independent Validation of Draft CSAs", Standing Order SO-9110-95-09, 10/21/95
  - "NCSD Procedure Development", Standing Order SP-9110-96-15, 1/22/96
- "Writer's Guide for Y-12 Plant Technical Information", Y10-103, revision 1/18/96
- Bidinger, G.H. et al, "An Evaluation of the Nuclear Criticality Safety Program at the Y-12 Site," 1995
- NCS Deficiency Reports for D/A activities, 10/94-2/96
- "Nuclear Criticality Safety Department Operational Review of Procedure Performance" Reports for D/A activities, 2/95-1/96
- "Operational Review of Process Conditions" Reports for D/A activities, 7/95-9/95

- Y-12 Criticality Safety Committee, "1994 Criticality Safety Review of Enriched Uranium Operations, Disassembly and Storage Operations, and the Nuclear Criticality Safety Department", 4/21/95
- "Central Safety Meeting Minutes," 8/24/95
- "Criticality Incident Review Meeting Minutes," for 6/7/95, 7/10/95, 8/2/95, 9/6/95, 10/4/95, 11/8/95, 12/6/95, and 1/3/96 meetings
- Criticality Safety Approvals and supporting evidence files, including "CSA Verification Checklists", "Facility/CSA Field Validation Checklists", and "Operational Review of Process Conditions", for D/A operations.
- "Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area", Y/TS-1314, Revision 1, 9/18/95.
- "Mentor Program Description for Y-12 Resumption", Y/AD-627, 3/27/95
- "Trip Report on Criticality Safety Bench Marking Efforts", Draft Rev. 1, 2/96
- "Fissile Material Container Abnormal Condition Response", Drill Guide No. 2-0001, Rev. B, 1/1/7/96.
- "Injured and Potentially Contaminated Worker", Drill Guide No. 2-0015, Rev. 0, 3/1/96

Interviews Conducted:

- Superintendent, Nuclear Criticality Safety Department
- Deputy Superintendent, Nuclear Criticality Safety Department
- Scientific Advisor, Nuclear Criticality Safety Department
- Resumption Coordinator, Nuclear Criticality Safety Department
- Group Leader, Metals and Nuclear Materials Control and Accountability (NMC&A) Group, Nuclear Criticality Safety Department
- Nuclear Criticality Safety Engineers (4), Metals and NMC&A Group, Nuclear Criticality Safety Department
- DOE Facility Representative, D/A Building
- Facility Manager, Bldg. 9204-2E
- Operations Manager, Bldg. 9204-2E
- DSO CSA coordinator
- Bldg. 9204-2E CSA coordinator
- DSO management and shift personnel within D/A facility (during CSA walkdowns and evolutions)
- Quality Organization Area Supervisor
- Quality Organization Area CSA Coordinator
- Quality Organization Radiography Area Supervisor
- Quality Organization shift personnel within D/A facility (during CSA walkdowns and evolutions)

Shift Performance Evolution:

- Walkdown of the major Disassembly and Storage Organization (DSO) CSAs in Building 9204-2E

- o Walkdown of the major Quality Organization (QO) CSAs in Building 9204-2E
- o Mockup disassembly
- o Radiography operation in quality evaluation unit
- o Assembly & verification/weld rings degreasing, electropolishing, electron beam welder, part marking, and inspection
- o DSO drill involving response to a fissile material container found in an abnormal condition
- o DSO drill involving injured and contaminated worker

Discussion of Results:

Record Review: The Health and Safety Procedure Y-70-150 clearly establishes the nuclear criticality safety program at Y-12 that supports D/A activities, defines the responsibilities of each of the operations, management, and support organizations, and establishes the Nuclear Criticality Safety Department (NCSD). Other Health and Safety Procedures (Y-70-150 to Y-70-162) clearly establish the activities and operating procedures of the NCSD. The functional layout, staffing levels, and reporting relationships of the NCSD are clearly presented in an organization chart. Roles and responsibilities within the department are defined in Y/DD-680. Collectively, these documents clearly lay out the functions, assignments, responsibilities, and reporting relationships for the NCSD and identify the relationships and responsibilities of the NCSD and the operations organization in criticality safety.

At the time of the Receipt, Storage, and Shipment (RSS) Readiness Assessment (RA) (August - Sept., 1995), a number of significant changes in the NCSD organization, procedures, and processes were being proposed and implemented. These included a new version of the basic NCSD procedure (Y70-150), expansion and improvement of the CSA review process with a significant revision to procedure (Y70-160), hiring of additional staff, restructuring of the NCSD, increased emphasis on the quality of CSAs and procedures, increased emphasis on the clarity of CSAs, more formal periodic review of the operating facilities, and incorporation of criticality safety steps into procedures. It was expected that collectively, those changes would reduce the likelihood of problems with CSAs of the type observed prior to and during the RSS RA and lead to an excellent program.

Approximately six months later, review of the documentation indicates that these changes have now been implemented. New versions of the nuclear criticality safety program procedure (Y70-150) and criticality safety approval system (Y70-160) have now been implemented and represent substantial improvements. In spite of budgetary conditions, additional qualified criticality safety specialists have been added to the department, with adequate attention continuing to be provided to RSS and D/A activities. The current organizational structure offers clear lines of responsibility and reporting relationships which were observed to be effective during this review.

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Review of CSAs, supporting evidence files, and selected procedures covering D/A activities indicates that the increased efforts in preparing clear and unambiguous CSAs that were being implemented at the time of the RSS RA have been effective. As a rule, the D/A CSAs are a significant improvement.

A number of areas were reviewed to determine the overall effectiveness of the criticality safety program as applied to D/A. This included the historical record of criticality safety deficiencies associated with D/A operations and the results and corrective action plans of other assessments, including the DOE assessments in response to DNFSB Recommendation 94-4, the LMES RA, and the YSORT assessment. Collectively, these documents indicate that while problems are still being found with CSAs and their implementation in D/A activities, the problems are at a negligible criticality risk level and are promptly corrected.

Review of recent deficiency reports covering D/A activities indicates the number of deficiencies is trending down, with fewer and less severe deficiencies being found. The overall number and rate of CSA deficiencies with D/A activities has declined substantially. In general,the problems that have recently been found with the D/A CSAs are due to subtleties in the wording and interpretation, not fundamental problems.

The process for the NCSD performing operational reviews as required by the ANSI standards has been improved and incorporated into the new procedure Y70-66-CS-330. This procedure requires NCSD personnel, in conjunction with operations, to perform operational review, including field verification, of process conditions and procedural compliance for conformance with criticality safety assumptions, requirements, and limitations.

Applicable CSA requirements are now beginning to be incorporated into facility operating procedures, with the D/A operating procedures effectively serving as a test bed for this process. For the D/A operating procedures reviewed, the applicable CSA requirements and clarifications had been incorporated, with the CSA from which these requirements came listed as "source documents". In cases where the CSA was still needed to perform the activities governed by the procedure, such as the extensive container requirements CSAs, they were listed as "primary references". Until the procedure governing this process is completed (expected to be by 5/31/96), this process is governed by Standing Order SO-9110-96-15.

These results indicate that the changes in the NCSD that had just been implemented during the RSS timeframe have matured.

Review of the current NSCD organization chart (dated 2/20/96) indicates that several temporary subcontractor personnel are being utilized for staff support. Three subcontractor personnel are assigned to the Metals and NMC&A Group, which supports D/A activities. Document Y/DD-587, Rev. 13, lists which subcontractor personnel are qualified for specific NCSD tasks, their specific task and duty assignments, and which NCSD computer codes they are qualified to use. Overall, the documentation indicating their functions, assignments, responsibilities,

reporting relationships, specific qualifications, and experience of personnel for these temporary, subcontractor personnel assigned to augment/strengthen the criticality safety organization have been defined to a level approximately equivalent to permanent NCSD personnel. Each of these temporary, subcontractor personnel serves at the pleasure of the NCSD Superintendent and can be removed at will. If they were removed, adequate staff would remain to serve the essential NCSD functions, including restart of D/A activities. However, other planned restart activities could be impacted.

One person is also indicated as serving as mentor to the Solution, Waste, Plant Laboratory and Development Group Leader. He was formally a member of the Y-12 mentor program but is currently being paid for and used as needed by the NCSD Superintendent. He is not being used as a compensatory measure.

Interviews: Discussions with management and technical staff in the Nuclear Criticality Safety Department (NCSD) supporting D/A activities indicate that they are knowledgeable of their roles, responsibilities, and reporting relationships. The staff is technically excellent and has an excellent understanding of the facilities for which they have responsibility.

Interviews during the RSS RA indicated that staffing levels within the department had been a problem, but activities were under way at that time that were expected to alleviate the concern. In spite of budgetary concerns and constraints, these efforts were successful. With three additional staff members being hired, staffing will be adequate for the current work load within the department.

During the RSS RA, interviews indicated that work demands on key senior staff have been very high. It appears that while key staff are still contributing significant overtime, the addition of staff to the department and the refinement of the processes for CSA and procedure development and review have allowed work levels to return to moderate.

Interviews indicated that much progress has been made in development and refinement of the CSA process since the RSS RA. The changes being made at that time, approximately six months ago, have now been implemented and are functioning adequately. The process has now matured.

The interviews also indicated that most of the changes had been incremental in nature. With the exception of the transition to placing the CSA requirements into stand-alone procedures, most of the changes have been refinements and improvements to the old system, not fundamental changes in the way of doing business. Several external reviews of the NCS Program have indicated that while the existing process did not lead to significant safety concerns, other ways of implementing criticality safety might be more efficient.

Since the RSS RA, the NCSD Superintendent, in conjunction with Y-12 operating departments, support organizations, facility safety, and the DOE site office, initiated visits to three other DOE sites to benchmark areas for improvement in

the Y-12 plant criticality safety program. A small, diverse group visited these sites with the intent of identifying the best of practices at the sites that could be adapted to the Y-12 plant. Discussions with NCSD personnel and review of a draft report being prepared by NCSD in conjunction with operations and the DOE site office indicates that many good ideas were seen at other plants. The next steps are to gain concurrence on which ideas to adopt, develop a long-term NCS improvement plan, and begin implementation. Discussions with the NCSD Superintendent indicated that the key factor in the timing of implementing the changes was likely to be budget considerations.

This process to make the long-term improvements to the Y-12 criticality safety program suggested by many outside reviewers appears to be progressing and should be continued. (CS1-1)

Shift Performance: NCSD personnel were observed performing operational reviews of process conditions in conformance with the new procedure Y70-66-330. This new procedure consolidates several reviews that had been performed in the past. The major DSO and QO CSAs for Building 9204-2E were walked down with a criticality safety engineer and a representative from operations.

Observation of several evolutions and activities associated with the walkdown of selected CSAs for the D/A activities in Building 9204-2E indicated that both the operations and NCSD staff are keenly aware of the criticality safety operating limits and respond quickly to potential infractions. Walkdown of the D/A CSAs with three criticality safety engineers supporting D/A activities indicated that they were thoroughly knowledgeable of the facilities and were well aware of the criticality safety issues. Operating personnel interviewed during these walkdowns and evolutions were also well aware of the criticality safety issues and responded correctly when potential incidents were identified. Review of the posted criticality safety operating limits in the operating areas indicated 100% agreement with the CSAs.

During one walkdown, bags of combustible radioactive waste were observed being stored in both fissile and non-fissile material arrays. Operations staff were questioned on how they knew the waste outside the fissile arrays did not contain fissile material. The bags were not clearly labeled with the source of the waste and it could not be quickly determined that they did not contain fissile material. It took over an hour before operations staff could clearly convince the criticality safety staff that based on the historical data and operations in the building, the bags would not contain significant quantities of fissile material. Both operations and NCSD staff performed adequately and there was not a criticality safety deficiency. However, such problems in quickly identifying the source of potentially fissile material could lead to future operational problems since future operations in the building may generate waste contaminated with highly enriched and depleted uranium.

Collectively, the walkdowns of the major D/A CSAs and observations of several evolutions and drills indicate that:

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- The use of criticality safety postings has improved since the RSS RA, with clearer, less ambiguous limits and complete correspondence to the CSAs.
- The CSAs and corresponding postings were simplified with the wording on many postings being the same.
- No problems with CSA compliance were observed by any of the team members. While several questions were raised during the walkdowns, none of these issues resulted in a CSA deficiency.
- Both NCSD and operations personnel are well aware of the proper steps to follow when a potential CSA infraction is raised.
- The insertion of CSA requirements into D/A operating procedures worked well.

Overall, the criticality safety requirements developed by the NCSD have been effectively implemented in the proposed D/A operations.

Conclusion: The criticality safety program supporting D/A activities has been substantially refined since the RSS RA and is continuing to improve. The efforts underway to identify and implement the best criticality safety practices from other sites will improve the overall efficiency of the Y-12 criticality safety program and should be strongly supported. The criteria for this objective have been met.

Issue(s):

o Long-Term Improvements to Y-12 Criticality Safety Program Should Continue. (CS1-1)

Reviewer: Doug Outlaw / D. Ken Rhyne, Jr.	Approved: John D. Rothrock

RA DEFICIENCY FORM 2
Criticality Safety

Functional Area: CS	Objective No.: 1	Finding Observ. X	Pre-Start Post-Start	Issue No.: 1 Rev. No.: 0 Date: 3/2/96

ISSUE: Long-Term Improvements to Y-12 Criticality Safety Program Should Continue.

REQUIREMENTS: Management shall accept overall responsibility for safety of operations. Continuing interest in safety should be evident. (S/RID Statement Number: 7.a.(1) [ANSI 8.19/4.1])

Management shall provide personnel familiar with the physics of nuclear criticality and with associated safety practices to furnish technical guidance appropriate to the scope of operations. (S/RID Statement Number: 7.a.(1) [ANSI 8.19/4.4])

REFERENCE(S): LMES Standards/Requirements Identification Document, Functional Area: Criticality Safety, incorporates ANSI 8.19 requirements.

DISCUSSION: Since the 1994 criticality safety infraction at the Y-12 plant, a large number of improvements have been made to the criticality safety program. Most of the changes, however, have been incremental in nature. With the exception of the transition to placing the CSA requirements into stand-alone procedures, most of the changes have been refinements and improvements to the old system, not fundamental changes in the way of doing business. Several external reviews of the NCS Program have indicated that while the existing process did not lead to significant safety concerns, other ways of implementing criticality safety might be more efficient.

Since the RSS RA, the NCSD Superintendent, in conjunction with Y-12 operating departments, support organizations, facility safety, and the DOE site office, initiated visits to three other DOE sites to benchmark areas for improvement in the Y-12 plant criticality safety program. A small, diverse group visited these sites with the intent of identifying the best of practices at the sites that could be adapted to the Y-12 plant. Discussions with NCSD personnel and review of a draft report being prepared by NCSD in conjunction with operations and the DOE site office indicated that many good ideas were seen at other plants. The next steps are to gain concurrence on which ideas to adopt, develop a long-term NCS improvement plan, and begin implementation. Discussions with the NCSD Superintendent indicated that the key factor in the timing of implementing the changes was likely to be budget considerations.

CONCLUSION: This process to make the long-term improvements to the Y-12 criticality safety program suggested by many outside reviewers is progressing and should be continued.

Reviewer: Doug Outlaw /D. Ken Rhyne, Jr.	Approved: John D. Rothrock John D. Rothrock

RA ASSESSMENT FORM 1
Criticality Safety

FUNCTIONAL AREA: CS	OBJECTIVE 2, REV. 0 DATE: March 6, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: A baseline compliance status review of Department of Energy Order 5480.24 has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria
All noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance. Actions described in the Request for Approval have been adequately addressed for the facility/activity. (Y/AD-623, Plans of Continuing and Resuming Operations, dated October 1994, states this requirement)

Compensatory measures specified in the Criticality Safety Approval are adequately understood and implemented by operations managers. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach
Record Review: Review the Order compliance package for DOE Order 5480.24, including all applicable Compliance Schedule Agreements, exemptions and compensatory measures. For identified Requests for Approval, verify that schedule commitments have been met and compensatory measures identified.

Interviews: Interview management personnel to ensure that they are aware of the noncompliance(s) and actions necessary to fully carry out the Order requirements, and any interim compensatory measures.

Shift Performance: Where appropriate, observe the implementation of any specified compensatory measures within the facility to determine their effectiveness.

Records Reviewed:

- R.G. Vornehm, "Y-12 Implementation Plan for DOE 5480.24, "Nuclear Criticality Safety," Y/DD-621, Rev. 1, 6/1/94
- Standards/Requirements Identification Documents, "Assessment Summary Report, Nuclear Criticality Safety, DOE Order 5480.24," Programmatic Assessment and Adherence Based Assessment, 2/15/96
- Request for Approval, topic "Items to Include in the Safety Analysis Report," Request No. MMES/Y-12-DOE-5480.24-CSA-46B, 6/15/95
- Request for Approval, topic "Storage of Fissile Materials," Request No. MMES/Y-12-DOE-5480.24-CSA-54C, 9/26/95

- Request for Approval, topic "Monitoring for Accumulations of Fissile Materials," Request No. MMES/Y-12-DOE-5480.24-CSA-126A, 5/10/95

Interviews Conducted:

- Superintendent, Nuclear Criticality Safety Department
- Deputy Superintendent, Nuclear Criticality Safety Department
- Resumption Coordinator, Nuclear Criticality Safety Department
- Group Leader, Metals and NMC&A Section, Nuclear Criticality Safety Department
- Nuclear Criticality Safety Engineers (3), Metals and NMC&A Group, Nuclear Criticality Safety Department
- LMES Order Compliance Coordinator

Shift Performance Evolution:

- None

Discussion of Results:

Record Review: Review of the order compliance package for DOE Order 5480.24 indicated that three Requests for Approval (RFAs) of Compliance Schedule Agreements have been submitted by the contractor to DOE and are approved. Of these three, only two are indicated to apply to the Disassembly and Assembly facility and involve long term corrective actions. These are the requirements that (1) "storage of fissile materials shall be such as to obviate concern with accidental nuclear criticality in the event of fire, flood, earthquake or other natural calamities" and (2) that detailed criticality safety evaluations be included in safety analysis reports. The contractor indicated that compensatory measures were not required for either of these two Order requirements. These two RFAs are not considered as restart requirements for D/A.

It should be noted that DOE 5480.24 has been superseded by DOE 420.1. However, DOE O 420.1 has not yet been added to the LMES/DOE-ORO contract, thus this review continued to concentrate on the compliance status with 5480.24 requirements, which are incorporated into the LMES contract as Standards/Requirements Identification Documents.

Interviews: Discussions of the order compliance issues with senior management in the Nuclear Criticality Safety Department indicated that they were well aware of the DOE Order 5480.24 noncompliance issues and could adequately explain why they believed that compensatory measures were not required. They stated that for the D/A facility, the increased risks are small because a natural phenomena-induced criticality is considered incredible. Additionally, the process analyses supporting the Criticality Safety Approvals were identified as a guarantee that the double contingency principal is fully implemented for the D/A facility, and that the increased risks of postponing operations until the completion of new, approved SARs is small.

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Shift Performance: There are no compensatory measures required for implementation of DOE Order 5480.24 requirements. No shift performance observation was required.

Conclusion: The criteria for this objective have been met.

Issue(s):

o None

Reviewer: Doug Outlaw / D. Ken Rhyne, Jr.	Approved: John D. Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 1, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: The management qualifications of contractor personnel responsible for facility operations are adequate. **(CORE REQUIREMENT #19)**

Criteria

The Oak Ridge Y-12 Site contractor operations line management, up to and including the Manager of Nuclear Operations, have sufficient applicable experience and/or training to adequately understand facility operations and safety systems under their cognizance. (5480.20A, para 9, Ch. I, para 7, and Ch. 4, 5480.19, para 3.a.)

Entry-level requirements are established for each operations management position and include as applicable the minimum education, experience, technical, and medical requirements. (5480.20A, para 9, Ch. 1 and 4)

Approach

Discuss training and qualification review results with the Readiness Assessment team members evaluating the training area.

Interviews: Interview members of the contractor operations and safety organizations and mentors in place as compensatory measures and assess understanding of disassembly/assembly operations and the safety envelope. Verify whether management effectively promotes awareness of requirements for safe operation as reflected in Criticality Safety Approvals, Operational Safety Requirements and appropriate procedures by interviewing operations personnel.

Shift Performance: Observe management personnel interactions with operations personnel during evolutions and drills to assess qualification.

Records Reviewed:

- Training and Qualification records of selected managers were reviewed as part of objective TR3 of this Readiness Review.
- Y/AD-627, Rev. 1, Mentor Program Description for Y-12 Resumption

Interviews Conducted:

- Occupational Safety Managers (2)
- Occupational Health Manager
- Radiological Controls Manager
- Engineering Support Manager

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- o Disassembly and Assembly Operations Manager
- o Assigned Mentors (2)
- o Nuclear Maintenance Manager
- o Management Mentor for Nuclear Operations (1) and Balance of Plant (1)

Shift Performance Evolution:

- o Morning Briefing and Plan of the Day Meeting
- o Pre-operation Briefing, C5 Disassembly
- o C5 Disassembly Operation
- o Post Operation Briefing, C5 Disassembly
- o Drill involving contamination control and injured person
- o Pre and post drill briefing

Discussion of Results:

Records Review: Records reviewed indicated that the Managers and Mentors assigned to the Disassembly and Assembly Operation are trained and qualified to perform their assigned tasks. They had been assigned specific training requirements and the records indicated that their training was up to date. The Manager training requirements met the intent of DOE Order 5480.20A. The Mentor training requirements met the intent of the Mentor Program Description.

Interviews: Those interviewed were familiar with the safety requirements involved with the Criticality Safety Approvals (CSAs), the Operational Safety Requirements (OSRs) and the operating procedures in use at the facility. The assigned Mentors were very knowledgeable and familiar with their responsibilities and roles as they relate to compensatory measures. One of the Mentors assigned to the facility left during the Readiness Assessment for other employment. A new Mentor has been assigned, but is not in the facility and has not been evaluated as part of this assessment. Interviews of operations personnel were conducted as part of this Readiness Assessment (OP2) and these interviews indicated that Managers have stressed awareness of the CSAs, OSRs and the proper use of operating procedures in the facility.

Shift Performance: Observation of the listed activities indicated that the Managers are knowledgeable and understand their role in assuring safety of operations. The Mentors were ever present and effective. The Operators and the Managers demonstrated clear appreciation for the assigned Mentors.

Conclusion: The criteria for this objective have been met.

Issue(s):

- o None

Reviewer: Jim Grise	Approved: John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 2, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety. **(CORE REQUIREMENT #11)**

Criteria

The functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations), have been adequately defined, understood and effectively implemented. This includes confirmation that line management clearly understands and accepts their responsibilities for control of safety. (5480.19, para 4)

The functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors assigned as compensatory measures have been defined. The conditions under which mentors can be removed have been documented. (5480.19, Ch. I and III)

Approach

Record Review: Review the records to ensure that the functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations), have been adequately defined. Review the written definitions of the functions, assignments, responsibilities, reporting relationships, specific qualifications, and required experience of mentors assigned as compensatory measures. The conditions under which mentors can be removed have been documented. (5480.19, Ch. I and III)

Interviews: Interview selected managers to verify that line management understands and has implemented the functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations). Verify that individuals understand the conditions under which mentors can be removed.

Shift Performance: Observe how line management communicates and has implemented control of safety.

Records Reviewed:

- Y-12 Nuclear Operations Conduct of Operations Manual
- Disassembly and Storage Organization Charts
- Entry level requirements for DSO Managers
- Entry level requirements for Mentors
- Approved Roles and Responsibilities for selected DSO Managers (3)

- Summary of Manager Professional experience (3)
- Y/AD-627, Rev. 1, Mentor Program Description for Y-12 Resumption
- Mentor experience and qualification summary (1)
- Conduct of Operations Performance Indicator Report, dated February 21, 1996
- Selected Mentor Weekly Reports
- Selected Mentor Conduct of Operations assessment reports

Interviews Conducted:

- Occupational Safety Managers (2)
- Occupational Health Manager
- Radiological Controls Manager
- Engineering Support Manager
- Disassembly and Assembly Operations Manager
- Assigned Mentors (2)
- Management Mentor for Nuclear Operations
- Management Mentor for Balance of Plant
- Nuclear Maintenance Manager

Shift Performance Evolution:

- Morning Briefing and Plan of the Day Meeting
- Pre-operation Briefing, C5 Disassembly
- C5 Disassembly Operation
- Post Operation Briefing, C5 Disassembly
- Drill involving contamination control and injured person
- Pre and post drill briefing

Discussion of Results:

Record Review: Records provided adequate descriptions of the Managers and the Mentors roles and responsibilities. The organizational structure is well defined. Reporting relationships are clearly defined. During the review, there were adequate numbers of matrix support personnel assigned to the facility to support routine operations. Additional support services are available, but at an additional cost above the currently budgeted overhead.

The conditions under which Mentors may be removed from the role as a compensatory measure are appropriate and clearly defined in the Mentor Program Document.

The successful completion of Mentor Conduct of Operations support functions is defined as reaching a performance level of eighty percent in the Mentor evaluated Performance Measures. The facility is currently evaluated to be at sixty-one percent with a goal of eighty-one percent. Removal of Mentors from any position other than that of a compensatory measure is beyond the scope of this review.

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Two Mentors are assigned to the facility. One of these Mentors left the facility for other employment during this review. A replacement has been identified, but his performance was not evaluated as part of this assessment. The Mentor is in the planning critical path for most operations in the facility. This will cause program difficulties if Mentor flexibility is not provided or additional Mentor coverage is not readily available.

Interviews: Those interviewed had a clear understanding of their responsibilities and the organizational reporting relationships. They were comfortable with their assigned functions and the support staffing within the organization.

The specific requirements for removal of Mentors as compensatory measures are new and not thoroughly understood by all of the managers. The Mentors and the Operations Manager have a clear understanding of the requirements and the need to carefully manage this program in order to be able to efficiently operate the facility.

Shift Performance: The Managers were observed during various evolutions and drills. Their performance was measured and methodical. Few activities occurred on time and many hours were wasted during the performance of the review. During the review, many of the managers were unsure of their authority and confused about managing safety versus managing daily routine. Planning activities that require support from organizations not involved with the restart effort received guarded support as observed during the review. Management decisions waiver routinely with questions from local DOE representatives. Currently, confidence is weak and upper level management support, counsel and team building could use improvement. (MG2-1) TR1-2 discusses similar types of observations.

Mentor performance and support was effective.

Conclusion: The criteria for this objective have been met.

Issue(s):

- Upper level management support, counsel and team building could use improvement. (MG2-1)

Reviewer: Jim Grise	Approved: John Rothrock

ORR DEFICIENCY FORM 2
Management

Functional Area: MG	Objective No.: 2	Finding Observ. X	Pre-Start Post-Start	Issue No.: MG2-1 Rev. No.: 0 Date: 03/05/96

ISSUE: Upper level management support, counsel and team building could use improvement.

REQUIREMENT: None

REFERENCE(S): DOE Order 5480.19, Conduct of Operations and DOE Order 5700.6C, Quality Assurance.

DISCUSSION: The referenced orders discuss management practices to improve quality, efficiency and operator performance. Quality programs discuss employee empowerment and continuous process improvement. The Managers were observed during various evolutions and drills. Their performance was measured and methodical. Few activities occurred on time and many hours were wasted during the performance of the review. During the review, many of the Managers were unsure of their authority and confused about managing safety versus managing daily routine. Planning activities that require support from organizations not involved with the restart effort received guarded support as observed during the review. Management decisions waiver routinely with questions from local DOE representatives. Interviews disclosed problems with decision making and senior management support of decisions.

CONCLUSION: Currently, confidence is weak and there are indications that upper level management support, counsel and team building could use improvement.

Reviewer: Jim Grise	Approved: John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 3, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. **(CORE REQUIREMENT #6)**

Criteria

The outstanding open findings and corrective actions have been assessed by the contractor to determine if their lack of closure may preclude safe operations and if appropriate actions have been taken for those determined to have impact. (5480.19, Ch. VI and VIII; 5700.6C, para 9.b.(1)(c), 9.b.(3)(a), and Attachment I, para II.A.3.)

Approach

Record Review: Review the Energy Systems Action Management System and any other systems used to identify, evaluate, and resolve deficiencies, selecting representative issues and assessing the adequacy of the program. Assess the backlog and prioritization system for reducing it. This will include the Lockheed Martin Energy Systems, Inc. Operations Manager's reevaluation of internal and external assessment performed on their operations since October 1993. Determine if the corrective actions have been appropriate as discussed in Y/AD-623 and if Lockheed Martin Energy Systems, Inc. operations' response to outside reviewer comments and findings are adequate.

Interviews: Interview operational and management personnel to establish their understanding of the program.

Shift Performance: Evaluate the line management's understanding of the control of safety during a simulated off-normal safety condition.

Records Reviewed:

- Energy Systems Action Management System (ESAMS)
- DOE Order 5480.19, Ch. VI and VIII
- DOE Order 5700.6C, para 9.b.(1)(c), 9.b.(3)(a), att.I, para 9.b(1)(c)
- DNFSB Recommendation 94-4
- Y/OA-6238, LMES Readiness Assessment POA for D/A at Y-12 Plant, January 4, 1996
- Y/AD-623, Plan for Continuing and Resuming Operations, Y-12 Plant
- YSORT Assessment Plan for Disassembly/Assembly Activities Resumption, October 19, 1995

- Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994
- Y60-160, Y-12 Site Corrective Action Program
- Closure evidence files for selected MSA, LMES RA, and YSORT Assessment on D/A (3)
- LMES Corrective Action procedure, QA 16.1
- Y60-163, Validation and Verification
- Readiness Assessment Report for Receipt, Storage, and Shipment of Special Nuclear Materials at the Oak Ridge Y-12 Site
- ESAMS Item # I29766, Open LMES RA Pre-start Finding
- DOE-STD-3006-93, Planning and Conduct of Operational Readiness Reviews
- ESS-QA-16.4, Energy Systems Action Management Systems (ESAMS)

Interviews Conducted:

- Quality Specialist (2)
- Action Tracking Coordinator for D/A
- YSORT Subteam Leaders (2)
- D/A Resumption Manager
- Compliance Manager
- Issue Management Program procedure writer
- LMES RA Team Leader and three team members
- YSORT Assessment Leader and four team members

Shift Performance Evolution:

- Beta 2E battery acid spill drill
- Drill involving contamination control and injured person

Discussion of Results:

Records Review: The Energy Systems Action Management System (ESAMS) is being used to identify and track deficiencies and associated actions that resulted from external and internal independent assessments. The Y-12 Site procedure (Y60-160) describes the corrective action program and provides guidance for corrective action evaluation, validation, and approval. A corrective action verification procedure (Y60-163) is also in place and outlines documentation requirements and field walkdowns.

A review of ESAMS found that the majority of D/A specific actions have been closed with only one pre-start, with one action item, and four post start findings remaining open. The backlog of disassembly and assembly issues is being adequately managed with priorities placed on DNFSB Recommendations, external and internal independent assessments, and all issues that have been determined to directly affect and impact the D/A resumption effort. These also included issues from Special Operations Package reviews and resumption actions described in Y/AD-623.

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The LMES RA for D/A identified 19 pre-start findings. The required corrective actions were prepared and all findings were closed. The YSORT assessment, however, found that several findings did not have the required documentation for proper closure. In addressing this issue, LMES randomly selected four additional findings for reassessment and found three of these deficient. Further investigation found 13 of the 19 pre-start findings requiring either new actions or documentation. Only one finding remained open at the start of this assessment.

Three LMES RA closed evidence files were selected to assess the adequacy and effectiveness of the LMES corrective action program. The documentation review and field walkdowns determined that all three files were adequately closed. A check with ESAMS also revealed that action status is correctly reflected. This is an improvement from the effort found during the Receipt, Storage, and Shipment conducted in September 1995. The evidence files, however, did not provide the necessary verification documentation as required by DOE-STD-3006-93 in that the description of the verification for closure was not provided. (MG3-1).

LMES QA 16.1, "Corrective Actions," is currently under revision and will be retitled "Issue Management Program". This procedure is expected to simplify and improve the overall corrective action process Energy Systems wide. The tracking system, ESAMS, will also be reprogrammed to provide added sorting features and upgraded to become a real-time database.

Interviews: The listed interviews were conducted and managers and ESAMS users discussed their understanding and expectation of ESAMS to support the D/A Resumption and their normal operations of facilities. From discussion, it was determined that ESAMS is the formal action tracking system, although the process is somewhat burdensome to use. LMES management has made the commitment to use ESAMS as the issue management tracking system and improvement to the system is under way.

Shift Performance: Drill program events were observed to determine how the identified issues would be tracked and finally corrected. The drill program is immature but the tracking method will drive issues to closure. It requires rigorous individual management by the assigned drill coordinator and the operations manager to take the items from the drill guide and cause training to be accomplished, work requests to be generated or procedures modified. This process should be proceduralized to facilitate the effort.

Conclusion: The criteria for this objective have been met.

RA ASSESSMENT FORM 1
Management

Issue(s):

- LMES evidence files do not contain the necessary verification documentation for pre-start finding closures. (MG3-1)

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John D. Rothrock John Rothrock

RA DEFICIENCY FORM 2
Management

Functional Area: MG	Objective No.: 3	Finding X Observ.	Pre-Start Post-Start X	Issue No.: MG3-1 Rev. No.: Date: 03/05/96

ISSUE: LMES RA evidence files do not contain the necessary verification documentation for pre-start finding closures.

REQUIREMENT: " ...Closure packages should contain the following information:...A brief description of the actual corrective actions taken and the reason for concluding that closure has been achieved and how referenced documents support closure."

"As a minimum, the DOE and responsible contractor ORR (RA) reports shall be maintained in auditable form. This should include the ORR finding closure records."

REFERENCE(S): DOE-STD-3006-93, Planning and Conduct of Operational Readiness Reviews, sections 4.5.d and 5.7.3.

DISCUSSION: Three LMES RA D/A pre-start finding closure evidence files were reviewed to verify proper documentation of closure. None of the files contained a description of the reason for concluding that closure has been achieved or how referenced documents support the closure, as specified in DOE-STD-3006-93. Actions should be taken to improve the documentation of closure to meet these requirements. These records are required to be retained as quality records.

CONCLUSION: Field verification of several of the corrective actions confirmed that the actions had been accomplished and, therefore, this is considered a post-start finding.

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John D Rothrock John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 4, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A systematic review of the facility's conformance to applicable Department of Energy Orders has been performed, any contractor non-conformance issues have been identified, and schedules for gaining compliance have been justified in writing and formally approved. **(CORE REQUIREMENT #7)**

Criteria

Noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance. Actions described in the Requests for Approvals have been adequately addressed for the facility/activity. This includes both the site-level programmatic and facility-level compliance and adherence-based assessments. (Y/AD-623, Standards/Requirement Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

The Order Compliance Self-Assessment program is an ongoing and viable program supporting line management needs. (Standards/Requirements Implementation Assessment Instruction)

Approach

Record Review: Confirm that the noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance and if the actions described in the Requests for Approvals have been adequately addressed for the facility/activity.

Interviews: Interview operations managers and operations personnel to assess their understanding of compensatory measures that are in place for existing non-compliances and actions in progress to gain compliance.

Shift Performance: Observe and assess the adequacy of any compensatory measures that are in place during the conduct of evolutions and drills.

Records Reviewed:

- Y/OA-6248, LMES Management Self Assessment Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant

- Y/OA-6249, LMES Readiness Assessment Report for the Resumption of Disassembly/ Assembly Activities at the Oak Ridge Y-12 Plant
- La Grone to Fee Memo, Interim Revision to Orders Compliance Process, November 1, 1994
- LMES/Y-12-DOE-4330.4A-CSA-17
- LMES/Y-12-DOE-5480.19-CSA-34C
- LMES/Y-12-DOE-5400.5-CSA-67B
- LMES/Y-12-DOE-5480.11-CSA-68
- LMES/Y-12-DOE-5480.20-CSA-82D
- Open D/A specific RFA MMES/Y-12-DOE-5480.19-CSA-160, 11/04/95
- A list of D/A specific RFAs
- Y10-182, Development of Request for Approval, June 1, 1994
- Y-12 Site Standing Order, Self Assessment, November 27, 1995
- LMES/Y-12-DOE-5480.22-80B

Interviews Conducted:

- Manager, Compliance Management, Y-12 Quality
- Issue Management Manager for D/A
- Operations Manager, D/A
- YSORT Leader
- LMES RA Team Leader
- D/A Supervisors (2)

Shift Performance Evolution:

- Beta 2E Battery Acid Spill Drill

Discussion of Results:

Records Review: Documents reviewed indicated that LMES has in place a structured Order Compliance review process. The La Grone to Fee memo dated November 1, 1994, approved the Standards/Requirements Identification Document (S/RID) prepared by MMES covering the Y-12 Site. For the facilities in the D/A mission area, RFAs have been prepared and compensatory measures and schedules for compliance are available. Forty-three (43) RFAs have been identified as D/A specific with three requiring preresumption actions. These three RFAs are related to training (CSA-82D), technical safety requirements (CSA-80B), and conduct of operations (CSA-160A). CSA-80B and CSA-82B have corrective actions that have been approved by DOE and are closed. CSA-160A, which required both corrective and compensatory actions, remains open. The required approval has been obtained from DOE. There are no unapproved RFAs applicable to D/A.

Review of the most current order compliance status in the Y-12 S/RID indicated that updates were being made as new noncompliances and changes are identified. During a recent readiness assessment for the Receipt, Storage, and Shipment Activities, a concern was identified that the results of ongoing assessments since September 1994 were not incorporated into the database to confirm adherence

to requirements. In addressing this issue, Y-12 Defense Program Manager has issued a Standing Order requiring facilities and organizations to report ongoing assessment results for inclusion in the S/RIDS database.

Interviews: Interviews with D/A managers and supervisors indicated good level of knowledge for RFAs of their facilities and associated compensatory measures. The compliance manager tracks compliance status for D/A specific RFAs and is very knowledgeable on S/RID requirements.

Shift Performance: The compensatory measure of requiring mentor oversight during selected evolutions was observed and effectively implemented. The assigned mentor was active in all phases of observed operations.

Conclusion: The criteria for this objective have been met.

Issue(s):

o None

Reviewer: C S Hsieh Clifford Hsieh	Approved: John D Rothrock John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 5, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A program is established to promote a site-wide safety culture. **(CORE REQUIREMENT #14)**

Criteria

An increased awareness and understanding of criticality safety and conduct of operations principles has been achieved. Training done as a corrective action for the shutdown initiating events has been responsive to the causal factors. (5480.1B, Ch. IX; 5480.29, para 9.a.)

Approach

Record Review: Spot check that the training done as a corrective action for the shutdown initiating events has been responsive to the causal factors. Review any processes used by management to continue to maintain and communicate these safety priorities.

Interviews: Interview a cross-section of personnel to spot check for the level of awareness and understanding of criticality safety and conduct of operations. Compare the observed level of awareness and understanding with description of the causal factors.

Shift Performance: During shift performance and drills monitor the level of supervisory and operator concern for criticality safety and conduct of operations principles.

Records Reviewed:

- EO 156, Rev. 1, Employee Concerns Response Program
- MMES ES-LR-400,Rev.2, Freedom to Express Concerns without Reprisal
- MMES ES-EO-200, Rev. 0, Salaried Employee Complaint Handling
- 10 CFR 708, DOE Contractor Employee Protection Program
- Bulletin boards
- Lessons Learned Database Reports for week of Feb. 26-Mar.1, 1996
- Record review of initial and continuing training as a corrective action for the shut down initiating event was conducted as part of Objective TR.3

Interviews Conducted:

- Occupational Safety Managers (2)
- Occupational Health Manager
- Radiological Controls Manager
- Engineering Support Manager

- o Disassembly and Assembly Operations Manager
- o Assigned Mentors (2)
- o Nuclear Maintenance Manager
- o Management Mentor for Nuclear Operations
- o Management Mentor for Balance of Plant
- o Operators were interviewed as part of Objective OP1, 2 and 3

Shift Performance Evolution:

- o Morning Briefing and Plan of the Day Meeting
- o Pre-operation Briefing, C5 Disassembly
- o C5 Disassembly Operation
- o Post Operation Briefing, C5 Disassembly
- o Drill involving contamination control and injured person
- o Pre and post drill briefing

Discussion of Results:

Record Review: Records indicate that a satisfactory program has been established to promote a site wide safety culture. Initial and continuing training has been conducted covering the causal factors of the September 1994 occurrence.

Interviews: Managers interviewed were very familiar with the corrective actions required for this event. They stated that they had observed an increased awareness of the operators and believed that safety had been improved throughout the facility. The operators were interviewed and the results of those interviews indicated increased awareness of safety requirements. Operator interviews are discussed in more detail under OP4 of this report.

Shift Performance: Criticality Safety and Conduct of Operations awareness was demonstrated during the observation of evolutions and drills.

Conclusion: The criteria for this objective have been met.

Issue(s):

- o None

Reviewer: Jim Grise	Approved: John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 6, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: The results of the responsible contractor "Readiness Assessment" are adequate to verify the readiness of hardware, personnel, and management programs for safe operations. The Y-12 Site Office has reviewed the contractor Readiness Assessment and management self-assessment and completed a management self-assessment which verifies the readiness of the Y-12 Site office to oversee resumed facility operations. **(CORE REQUIREMENT #17)**

Criteria

The contractor Readiness Assessment and management self-assessment were adequately executed and it is confirmed that the scopes were properly established. A sufficient breadth of activities, facilities, and management systems were reviewed. The contractor Readiness Assessment met the intent of the contractor Plan-of-Action, Implementation Plan, and Criteria and Review Approach Documents as written. Corrective actions and closure packages for restart findings have been verified to formally document, manage and resolve the Readiness Assessment restart findings. The contractor has issued a Readiness-to-Proceed Memorandum which is endorsed by the Y-12 Site Office and transmitted to the Restart Authority. (5480.31, para 9.b. (9) and (10))

Approach

Record Review: Review the contractor Readiness Assessment plan, findings, recommendations, implementation plans, and schedules to ensure they are complete in scope and adequate in detail. Verify the rationale for contractor acceptance of any noncompliance items. Decide whether the contractor has systematically analyzed findings for root causes and generic implications. Review the qualifications of the contractor Readiness Assessment team. Verify the contractor Readiness Assessment met the intent of the contractor Plan-of-Action, Implementation Plan, and Criteria Review and Approach Documents as written. (Input should be solicited from each functional area for this objective.) Review the contractor management self-assessment plan, findings, recommendations, and schedules to ensure they are complete in scope and adequate in detail. Review the qualifications of the management self-assessment team. Decide whether the contractor has adequately verified readiness assessment prerequisites and core objectives as identified in the Plan of Action and verified completion of other commitments in Document Y/AD-623, *Plan for Continuing and Resuming Operations*.

Interviews: Interview contractor Readiness Assessment team and Management Self-Assessment team leaders to verify the adequacy of their assessments.

RA ASSESSMENT FORM 1
Management

Shift Performance: Select previously identified findings to determine if corrective actions have been effective in resolving the issue.

Records Reviewed:

- Y/OA-6238, LMES Readiness Assessment POA for Disassembly and Assembly Activities at Y-12 Plant, January 4, 1996
- Y/OA-6248, MSA Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant
- Y/AD-623, Plan for Continuing and Resuming Operations, Y-12 Plant
- Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994
- Y/OA-6244, DSO MSA for Disassembly and Assembly and Quality Support Functions
- Y60-160, Corrective Action Program
- Y60-162, Root Cause Analysis
- Selected closure evidence files from MSA, LMES RA, and YSORT Assessment issues (6)
- Y/OA-6245, LMES Implementation Plan for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant
- Y/OA-6249, LMES RA Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant, January 15-26, 1996
- Y/OA-6249 Addendum, follow-up LMES RA Report, February 22, 1996
- Memorandum, DOE Self Assessment for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant, February 23, 1996

Interviews Conducted:

- LMES RA Team leader and selected team members (3)
- YSORT Team leader and selected team members (4)

Shift Performance Evolution:

- Walkdown of the corrective actions associated with the following findings
  - LMES RA Finding L-RA-OP-1-4
  - LMES RA Finding L-RA-OP-1-2
  - LMES RA Finding L-RA-TQ-2-2

Discussion of Results:

Records Review: The Management Self-Assessment (MSA) Plan-of-Action (POA) and LMES Readiness Assessment (RA) Implementation Plan for the Disassembly and Assembly Activities (D/A) were reviewed for depth and breadth. The scope of LMES RA Implementation Plan followed the boundaries defined by the LMES POA and included 19 DOE Order 5480.31 Core Objectives (COs). The LMES RA also reviewed 15 prerequisites that must be complete before beginning LMES RA. These prerequisites consisted of management plans and reviews necessary to ensure line management readiness to proceed for safe operations. Additionally, the LMES RA also reviewed the causal factors associated with the September 22, 1994, incident

and issues relating to DNFSB Recommendation 94-4. The LMES RA Implementation Plan identified four major functional areas to be reviewed. These areas were: (1) Management; (2) Operations; (3) Safety Envelope; and (4) Training and Qualification. The breadth and depth of LMES RA Implementation Plan was appropriate and the report was comprehensive and well documented. The LMES RA followed the Criteria and Review Approach Document specified in the Implementation Plan and adequately addresses the requirement for evaluating readiness of hardware, personnel, and management programs. The makeup of both LMES MSA and RA Teams included experienced and well qualified personnel.

The YSO validation and verification of the results of the LMES MSA and RA was adequate. Deficiencies in this process are discussed in MG8.

Interviews: Those listed were interviewed to discuss the effectiveness of the LMES RA and YSORT assessment. The LMES RA Team was knowledgeable. The Team Leader was aware of the scope and review approach as described in the LMES D/A Plan-of-Action and Implementation Plan. YSORT Team Leader and Functional Leads who performed D/A assessments also understood the objectives of their reviews.

Shift Performance: Deficiencies in closure evidence files were discovered and are discussed in MG3-1.

Conclusion: The criteria for this objective have been met.

Issue(s):

o None

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John E. Rothrock John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 7, REV. — DATE: March 5, 1996	CRITERIA MET	
		YES___	NO X

OBJECTIVE: Y-12 Site Office Facility Representatives are assigned and qualified to oversee and provide direction and guidance to the contractor. **(CORE REQUIREMENT #16)**

Criteria

Qualification of the Oak Ridge Y-12 Facility Representatives is in accordance with locally developed interim qualification standards. Long-term plans are developed for eventual qualification. There are sufficient numbers of Facility Representatives for oversight of conduct of operations and criticality safety. If a Facility Representative has not completed interim qualification, a mentor is assigned as a compensatory measure and mentoring requirements are defined and adequate. (DOE-STD-1063-93, para 4 and 5; 5400.20A, para 9, Ch. I, para 7, and Ch. 4; 5480.19, para 3.a.; Order 232.1, para 5.d, 8, and 9.h)

Approach

Record Review: Discuss the Facility Representative training and qualification review results with the Readiness Assessment team members evaluating the training area. Review Facility Representative's assignments. Review Facility Occurrence Report process.

Interviews: Interview Y-12 Site Office Facility Representatives to determine the degree of understanding of operations, safety envelope, past incidents and occurrences, conduct of operations principles, and stop work authority.

Shift Performance: Perform a walk through of the facility, with a qualified Facility Representative, to determine the Facility Representative's understanding of criticality safety and conduct of operations. Observe any interaction of the Oak Ridge Y-12 Site personnel during shift operations for related knowledge and required action.

Records Reviewed:

- YSO-1.6, Facility Representative Program
- YSO FACREPS Deficiency Tracking List
- YSO FACREPS Follow Up Items List
- Facility Representative assignments
- Facility Representative Assessment performance indicators
- Y-12 Annual Assessment Plan FY 1996
- Facility Representative Weekly Schedules

- Facility Representative Assessment Guidance Documents
- Facility Representative Records of Weekly Meetings
- Selected Y-12 Site Office Monthly Assessment Reports
- Facility Representative training and qualification records
- YSO-3.1, Conduct of Operations
- YSO-3.2, Deficiency: Tracking, Corrective Actions, and Closure
- YSO-3.4, Occurrence Reporting and Processing of Operations Information
- YSO-5.4, Operational Readiness Reviews/Suspension of Operations/Restart
- YSO-9.2, Contractor Oversight
- YSO-9.6, Management Walk-Around Surveillances
- Summary Occurrence Reports for 1995 and 1996
- Selected Occurrence Reports (4)

Interviews Conducted:

- Facility Representatives (2)
- Senior Nuclear Engineer

Shift Performance Evolution:

- Facility Representative daily activities
- Morning Briefing and Plan of the Day Meeting
- Pre-operation Briefing, C5 Disassembly
- C5 Disassembly Operation
- Post Operation Briefing, C5 Disassembly
- Drill involving contamination control and injured person
- Pre and post drill briefing

Discussion of Results:

Records Review: Three Facility Representatives have been assigned to this facility. One of these is the primary and the others are alternates. The assigned Facility Representatives have completed interim qualification and satisfied the requirements to provide oversight of the Disassembly and Assembly Operations. Minor deficiencies in the training records are recorded in Objective TR2. There are long term plans for completion of final qualification of all the Facility Representatives. This program is relatively new compared to other DOE sites. The progress toward final qualification of those assigned is satisfactory.

The Facility Representative is active in his role regarding Occurrence Reports and is familiar with all the requirements. This program is effectively implemented at the facility.

The Y-12 Facility Representative Program document describes the requirements for oversight coverage and systematic methods to be used as part of this effort. Special steps are described when the need for continuous coverage is required. No plan exists to provide continuous coverage of the Disassembly and Assembly Operation. This coverage should provide for the oversight of the contractor as

operations proceed from permission to resume to a condition of routine operations. The current documentation does not provide for a graded approach to these operations. A description of how the rest of the staff will support this effort is not provided. Without this guidance the Facility Representative could become overburdened and cause delays in facility operations. The operating contractor will not be fully aware of the oversight requirements. (MG7-1)

Interviews: The assigned Facility Representatives are fully aware of and understand the operations, safety envelope, past incidents and occurrences, principles of Conduct of Operations, and their authority to stop work. These are very competent people with exceptional experience and background for this assignment.

Shift Performance: Observation of the Facility Representative during his daily routine and performance during drills and evolutions indicated that he is effective and well respected by the contractor management.

Conclusion: The criteria for this objective have not been met.

Issue(s):

o Planned oversight coverage to support resumption of the Disassembly and Assembly Operations has not been documented. (MG7-1)

Reviewer: Jim Grise	Approved: John Rothrock

RA DEFICIENCY FORM 2
Management

Functional Area: MG	Objective No.: 7	Finding X Observ.	Pre-Start X Post-Start	Issue No.: MG7-1 Rev. No.: Date: 03/05/96

ISSUE: Planned oversight coverage to support resumption of the Disassembly and Assembly Operations has not been documented.

REQUIREMENT: An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.

Y-12 Site Manager...Provides administrative direction, the overall priorities, and guidance for the Y-12 Site Office Facility Representative and the Facility Representative program....Provides guidance on emphasis areas for contractor performance evaluation...Ensures open and timely communication between the FR and other DOE ORO organizations.

The Y-12 Site Office Senior Nuclear Engineer shall establish extended coverage that requires assessment coverage beyond the normal routine based on special activities, i.e., facility startup after extended shutdown or modifications, etc.

REFERENCE(S): DOE Order 5480.31/O 425.1, Start-up and Restart of Nuclear Facilities, Core Requirement 10; YSO-9.2, Contractor Oversight, Para. 1.1; and YSO-1.6, Facility Representative Program, Para. 4.2 and 5.6.

DISCUSSION: Resumption of Disassembly and Assembly Operations will require operators to perform activities in accordance with procedures on actual nuclear components. This will be the first time these personnel have actually used some of the equipment and performed the procedure on the real component. Core requirement 10 of the Start-up Order requires adequate plans for graded operations to simultaneously verify operability of equipment, the viability of procedures, and the training of operators. The operating contractor will be required to perform these operations using a graded operations plan. If the YSO Annual Assessment Plan is used to cover these operations the Facility Representative will be over burdened and some of his other duties neglected. The Contractor can plan his operations more effectively if he understands the oversight requirements.

RA DEFICIENCY FORM 2
Management

CONCLUSION: A YSO Disassembly and Assembly resumption oversight plan should be promulgated to verify effective graded operations. This plan should provide for the oversight of the contractor as operations proceed from permission to resume to a condition of routine operations. This plan is required before resumption.

Reviewer: Jim Grise	Approved: John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 8, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A Y-12 Site Office management self-assessment has been completed and has verified the readiness of the Y-12 Site Office to oversee the resumed facility operations. **(DP-1 PREREQUISITE CONCERN)**

Criteria

The management self-assessment has verified the post-operation findings from applicable special operation requests that have been determined to be prestart findings have been closed. Restart actions planned in response to Defense Nuclear Facilities Safety Board Recommendation 94-4 have been reviewed for pre-resumption items and any identified actions are completed. The Phase II items identified as restart issued in document, "Y-12 Site Office Plan for Line Assessment of Resumption of Activities and Programmatic Improvements at the Y-12 Plant," have been dispositioned and required prestart actions completed.

Approach

Record Review: Review the results of the Y-12 Site Office management self-assessment.

Interviews: Interview the team leaders and selected Y-12 Site Office personnel who participated in the management self-assessment.

Shift Performance: None.

Records Reviewed:

- YSORT Assessment Plan for Disassembly/Assembly Activities Resumption, October 19, 1995
- Summary Report, YSORT Assessment of the Disassembly and Assembly Activities at the Y-12 Plant, February 23, 1996
- Summary Report of the DOE Self Assessment for Disassembly and Assembly, February 23, 1996
- Readiness to Proceed Memo from Gustavson to Spence, February 23, 1996
- Y-12 Site Office Plan for Line Assessment of Resumption of Activities and Programmatic Improvements at the Y-12 Plant

Interviews Conducted:

- YSORT Leader and selected team members (4)
- Y-12 DOE Self Assessment Team Leader and selected members (4)
- Facility Representative

RA ASSESSMENT FORM 1
Management

Shift Performance Evolution:

o None

Discussion of Results:

Records Review: Records reviewed indicated that the Y-12 Site Office has performed a self assessment for the resumption of Disassembly and Assembly (D/A) activities. The DOE Self-Assessment concluded that findings from the Readiness Assessment (RA) of Receipt, Storage, and Shipment Activities (RSS) against DOE Oak Ridge Operations have been closed. Any implications as result of the RSS findings have been assessed and resolved for the readiness of D/A activity resumption. All prerequisites defined in the DOE Plan of Action for D/A have also been satisfied. Restart actions planned in response to Defense Nuclear Facilities Safety Board Recommendation 94-4 have been reviewed for pre-resumption items and any identified actions are complete. The Phase II items identified as pre-start issues in document, Y-12 Site Office Plan for Line Assessment of Resumption of Activities and Programmatic Improvements at the Y-12 Plant, have been dispositioned and required actions completed.

The YSORT assessment, conducted in accordance with Y-12 Site Office Restart Team Assessment Plan for D/A Resumption, evaluated the adequacy of the actions taken by LMES for D/A activities in six functional areas. These functional areas were Management, Operations; Procedures and Programs, Safety Envelope, Training and Qualification/Level of Knowledge, and Start-up Test and Assessments. The YSORT assessment was a performance based review and included assessments of LMES implementation of DOE Order 5480.31 requirements in the performance of LMES MSA and RA. The YSORT assessment was conducted over a three-month period and involved 20 experienced members. The assessment was comprehensive and resulted in the identification of 55 pre-start and 47 post-start findings.

During the September 27, 1994, DOE Self-Assessment for RSS, shortcomings with staffing and the qualification program for Facility Representatives and YSO staff were identified. The need for additional technical oversight personnel included Facility Representatives, criticality safety personnel, and conduct of operations personnel. The need for an enhanced technical training and qualification program, more explicit oversight expectations in conduct of operations and criticality safety, and better defined support in performance indicators and issues management were also identified. These issues have all been assessed for D/A applicability by the DOE management and required recovery actions are either in place or scheduled.

Selected closure packages for YSORT assessment pre-start findings were reviewed for completeness and closure adequacy. Corrective actions for YSORT findings have been prepared by LMES and validated by YSORT. Once the corrective action is implemented, YSORT performs the necessary verification and walkdowns. Evidence files reviewed, however, did not contain the necessary verification documentation for pre-start finding closure as required by DOE-STD-3006-93 in that the description of verification for closure was not provided. (MG8-1).

RA ASSESSMENT FORM 1
Management

Interviews: Those listed were interviewed and, overall, are knowledgeable in requirement for contractor oversight. Interviews also revealed that YSORT and DOE Self Assessment teams understood the scope and objectives of their reviews. The DOE Self Assessment Team Leader concluded that DOE has the required staffing and technical expertise to oversee the environmental, safety, and health programs associated with the D/A activities.

Shift Performance: None.

Conclusion: The criteria for this objective have been met.

Issue(s):

o YSORT evidence files do not contain the necessary verification documentation for pre-start finding closures. (MG8-1)

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John D. Rothrock John Rothrock

RA DEFICIENCY FORM 2
Management

Functional Area: MG	Objective No.: 8	Finding X Observ.	Pre-Start Post-Start X	Issue No.: MG8-1 Rev. No.: Date: 03/05/96

ISSUE: YSORT evidence files do not contain the necessary verification documentation for pre-start finding closures.

REQUIREMENT: " ...Closure packages should contain the following information:...A brief description of the actual corrective actions taken and the reason for concluding that closure has been achieved and how referenced documents support closure."

"As a minimum, the DOE and responsible contractor ORR (RA) reports shall be maintained in auditable form. This should include the ORR finding closure records."

REFERENCE(S): DOE-STD-3006-93, Planning and Conduct of Operational Readiness Reviews, sections 4.5.d and 5.7.3.

DISCUSSION: Three YSORT D/A pre-start finding closure evidence files were reviewed to verify proper documentation of closure. None of the files contained a description of the reason for concluding that closure has been achieved or how referenced documents support the closure, as specified in DOE-STD-3006-93. Actions should be taken to improve the documentation of closure to meet these requirements. These records are required to be retained as quality records.

CONCLUSION: Field verification of several of the corrective actions confirmed that the actions had been accomplished and, therefore, this is considered a post-start finding.

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John D. Rothrock John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE 1, REV. 1 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: There are sufficient numbers of qualified personnel to support safe operations. **(CORE REQUIREMENT #13)**

Criteria

Minimum staffing requirements have been established for operations personnel, supervisors, shift technical advisors, and managers. These staffing levels are met and are consistent with the safety analysis report requirements and assumptions. (Facility Safety Basis Documentation, 5480.20A, para 9)

Sufficient numbers of qualified operations personnel, supervisors, shift technical advisors, and managers are available to carry out facility operations. Staffing levels are consistent with the technical safety requirements. (Facility Safety Basis Documentation, 5480.20A, para 9)

Approach

Record Review: Compare Operational Safety Requirements and Limiting Condition for Operations staffing requirements, including both normal and postulated emergency conditions, with qualified personnel assignments to assess the ability of the facility to field the required personnel.

Interviews: Interview operators and supervisors to ensure they understand their responsibilities and roles with regards to minimum staffing requirements during all phases of facility operations.

Shift Performance: Assess staffing levels while observing drills and routine evolutions to determine their adequacy and ability to satisfy administrative and safety basis requirements.

Records Reviewed:

- Y/TS-1314 OSR for Buildings 9204-2 and 9204-2E
- D/A Required Reading Book through 28 February 1996
- D/A Standing Order 9204-2E-95-026

RA ASSESSMENT FORM 1
Operations

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager
- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Supervisors (4)
- D/A Assembly persons (14)
- D/A Welder
- D/A Cleaner
- D/A Shift Technical Advisor (STA) (2)
- D/A Mentors (3)
- D/A Process Engineer
- DSO Building Quality Evaluation Operations Manager
- DSO Procedures Manager
- DSO Procedure Writer
- DSO Training Manager
- DSO Trainers (2)
- DSO Compliance Manager
- DSO Emergency Preparedness and Drill Program Manager
- DSO Self Assessment and Order Compliance Manager
- D/A Order Compliance Manager
- DSO Quality Assurance and Issues Management Manager
- DSO D/A Conduct of Operations Implementation Manager
- DSO Health and Safety Implementation Manager
- DSO Health and Safety Assistant Implementation Manager
- DOE DSO D/A Facility Representative (FR)
- DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- Shift Operations Briefing and Plan of the Day (POD) (4)
- Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- DSO Evolution: C-5 Disassembly
- DSO Part Movement Operation: Walk-in Hood and Scales
- DSO Quality Organization (QO) Evolution: Radiograph
- DSO & QO Evolutions: Assembly and Verification, Weld Rings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- D/A Drill Briefs (3) and Debriefs (3)

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- o D/A Fissile Material Container Storage Abnormal Condition Response Drill
- o D/A Hazardous Spill Reporting and Responding Drill
- o D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: The Operational Safety Requirements(OSR) and Standing Order 9204-2E-95-026 for building 9204-2E were reviewed for minimum staffing requirements. Minimum staffing for safety and operations are addressed in Section 5.0, Administrative Controls, of the OSR.

Section 5.0 states that there are no minimum staffing requirements for safety to occupy the material access area in 9204-2E. This staffing conclusion is based on occupying the MAA while hazardous material is in storage and no operations are in progress. The OSR defines this building mode as "Warm Standby". "Warm Standby" does not require operations personnel to be present because the two safety significant systems are alarmed and continuously monitored at central locations (Fire Department and the PSS Office). The OSR does require the Site Operations Center to be manned by at least one person while in Operation and Warm Standby Mode. The Site Operations Center is manned at all times with at least one person. Training and qualification programs for the Site Operations Center and Fire Department monitors are currently being implemented. The Standing Order addresses specifically the numbers and types of personnel that are needed for minimum operations and minimum Warm Standby modes. There are sufficient number of qualified personnel to met these requirements.

Standing order 9204-2E-95-026 addresses the minimum staffing requirement, in general staffing for operations is determined by other requirements as they apply, such as: process, security, and nuclear material accountability requirements.

Interviews: Interviews were conducted on a cross section of building assembly persons, maintenance crafts, building supervisors, shift technical advisors and managers to determine if there was an understanding of the minimum staffing level for the facility. Managers, supervisors, and most assembly persons were knowledgeable of the requirements.

Shift Performance: Three drills and three evolutions were conducted where assembly persons, supervisors, and managers were observed performing their assigned duties and responsibilities. At all times during these activities, the required number of personnel if specified were present.

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Conclusion: The criteria for this objective have been met.

Issue(s):

None

Reviewer: David Allen	Approved: John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE: 2, REV. 1 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: Level of knowledge of operations personnel is adequate based on reviews of examinations, examination results, selected interviews and observation of work performance. **(CORE REQUIREMENT #3)**

Criteria

The level of operator fundamental knowledge is adequate to operate safely. (5480.19 Ch. XIII; 5480.20A, Ch. I, section 7 and 8, and Ch. IV, section 5).

Operations personnel retain a practical and adequate understanding of facility systems and operations. These personnel also give adequate attention to and retain an adequate knowledge of health, safety and environmental protection issues. (5480.19, Ch. XIII; 5480.20A, Ch. I, Section 7 and 8, and Ch. IV, Section 5).

Operators demonstrate the ability to carry out normal, abnormal, and emergency procedures. (5480.19 Ch. XIII; 5480.20A, Ch. I, Section 7).

Operators demonstrate a working knowledge of facility systems and components related to safety. (5480.19 Ch. XIII; 5480.20A, Ch. I, Section 7)

Approach

Record Review: None. (Review of examinations to decide if they adequately test the operator's understanding of technical fundamentals, facility systems, and operating procedures will be done under the Training [TR] area)

Interviews: Interview operators and supervisors to assess their understanding of facility processes, procedures, and fundamentals of disassembly/assembly as they relate to the restart effort. Determine if these personnel have an adequate knowledge of health, safety, and environmental protection issues. Verify the level of worker understanding and adequate use of applicable operating procedures, Criticality Safety Approvals and Operational Safety Reviews.

Shift Performance: Observe drills, simulations, routine evolutions and normal operations to assess technical understanding and ability of the operators and supervisors to conduct their duties and to safely operate systems and components according to approved plant procedures.

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Records Reviewed:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994
- (LMES) Y-12 Plan for Continuing and Resuming Operations at the OR Y-12 Plant, dated October 1994
- Y-12 D/A Conduct of Operations Programmatic Assessment of the Implementation of the applicable chapters of the Nuclear Operations Conduct of Operations Manual for the period of September 1995 through February 1996
- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 D/A Memorandum on the Conduct of D/A Drills of February 1996
- (LMES) OR Y-12 D/A, Critiques of D/A Incidents and Events for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization: Disassembly and Assembly Resumption Training Criteria, Developed by Management Assessments and Compliance, Revision 2 dated February 1996
- Selected Occurrence Reporting System (ORPs) Occurrence Summary Reports, applicable to OR Y-12 for the period of September 1995 through February 1996
- LMES Immediate Action Directive for Management Control Procedure EO-156, Employee Concerns Response, Revision 1 dated January 1996
- LMES Policy, Number ES-LR-400, Freedom to Express Concerns without Reprisal, Revision 2 dated 23 January 1996
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) of 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- (LMES) OR Y-12 D/A Training Lesson Plans for the applicable chapters to be implemented at D/A for the Conduct of Operations, (no dates) as of February 1996
- DOE ORO Y-12 DSO D/A Facility Representative (FR) Assessments for the period of September 1995 through February 1996
- D/A Shift Manager's Log
- D/A Temporary Modification Log
- D/A Lockout/Tagout Log
- D/A Quality Organization (QO) Log
- D/A Equipment Status Book
- D/A Deficient Material Condition Log
- D/A Operator Aid Log
- D/A Standing Orders
- D/A Required Reading Book through 28 February 1996

RA ASSESSMENT FORM 1
Operations

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager
- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Supervisors (4)
- D/A Assembly persons (14)
- D/A Welder
- D/A Cleaner
- D/A Shift Technical Advisor (STA) (2)
- D/A Mentors (3)
- D/A Process Engineer
- DSO Building Quality Evaluation Operations Manager
- DSO Procedures Manager
- DSO Procedure Writer
- DSO Training Manager
- DSO Trainers (2)
- DSO Compliance Manager
- DSO Emergency Preparedness and Drill Program Manager
- DSO Self Assessment and Order Compliance Manager
- D/A Order Compliance Manager
- DSO Quality Assurance and Issues Management Manager
- DSO D/A Conduct of Operations Implementation Manager
- DSO Health and Safety Implementation Manager
- DSO Health and Safety Assistant Implementation Manager
- DOE DSO D/A Facility Representative (FR)
- DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- Shift Operations Briefing and Plan of the Day (POD) (4)
- Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- DSO Evolution: C-5 Disassembly
- DSO Part Movement Operation: Walk-in Hood and Scales
- DSO Quality Organization (QO) Evolution: Radiograph
- DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- D/A Drill Briefs (3) and Debriefs (3)
- D/A Fissile Material Container Storage Abnormal Condition Response Drill

- o D/A Hazardous Spill Reporting and Responding Drill
- o D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: Assembly persons, building supervisors and managers examinations were reviewed and determined to adequately test their level of knowledge required for Restart. (TR4)

Interviews: Assembly persons, maintenance mechanics of different disciplines, building supervisors and managers were interviewed formally and while observing evolutions. These individuals were questioned in several areas, including: procedures, building safety systems, facility operations, fundamental requirements for restart, knowledge of health, safety, and environmental protection and the issues surrounding the September 1994 incident.

Interviewees were questioned on the specific 9204-2E safety systems. These questions included when a fire watch would be conducted and their reaction to an open unattended container. All were knowledgeable of both the systems and the proper response if there was a limiting condition.

Procedural questions concerning safety practices, such as an abnormal conditions and Nuclear Criticality Safety violations were asked and answered properly by assembly persons and supervisors. Assembly persons and support personnel were queried concerning facility operations during evolutions, specifically the disassembly of the C-5. There answers were complete and further demonstrated knowledge of the many procedures utilized in 9204-2E.

Personnel were questioned on the 1994 incident that lead to the shutdown of the Y-12 facility and the requirements for the restart such as qualification and certification. Their knowledge of these areas was adequate. In addition, 9204-2E personnel when questioned about ES&H requirements were familiar with both reporting and response requirements.

Shift Performance: Several drills and evolutions were conducted where operators, supervisors and managers were observed performing their assigned duties and responsibilities. In each of the evolutions and drills the supervisors and assembly persons demonstrated their ability to perform complex tasks by the procedure and in a safe manner. During these activities issues came up concerning equipment, procedures, or Nuclear Criticality Safety. Each incident was properly handled by the person in charge and the associated assembly persons. These observations confirmed that these assembly persons, building supervisors, and managers are well-trained and capable of safely performing their assigned task.

RA ASSESSMENT FORM 1
Operations

Conclusion:

The criteria for this objective have been met.

Issue(s):

None

Reviewer: David Allen	Approved: John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE: 3, REV. 2 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: The implementation status for Department of Energy Order 5480.19, "Conduct of Operations Requirements for Department of Energy Facilities," is adequate for operations. **(CORE REQUIREMENT #12)**

Criteria

Program requirements have been developed and issued for the topics addressed in the Order. (5480.19, para 5.a.)

Operations personnel demonstrate the principles of the conduct of operations requirements during the shift performance period. Adequate performance will be demonstrated in the following areas of the Order:

- Operations organization and administration;
- Shift routines and operating practices;
- Control of on-the-job training;
- Investigation of abnormal events;
- Control of equipment and system status;
- Required reading;
- Timely orders to operators; and
- Operator aid posting.

(Note: Procedural aspects of Department of Energy Order 5480.19, Ch XVI, are covered under Criteria Review and Approach Document PR.1) (5480.19, para 5.a. and b.)

Approach

Record Review: Review recently completed operations logs, shift turnover documents, and other plant records of note to assess compliance with conduct of operations principles. Review documentation of required shift operating practices, directives for control of on-the-job training, procedures for investigation of abnormal events, procedures for control of equipment and reporting of system status, evidence that required reading is being read, review of logs indicating timely orders to operators, and

operator aid posting. Review the written directives for placement of operator mentors in the operating areas, where full compliance with the conduct of operations requirements cannot be met prior to resumption of operations.

Interviews: Interview operators and supervisors to assess their understanding of the conduct of operations principles and their personal responsibilities in the performance of their duties for safe operations. In those areas where conduct of operations requirements cannot be met prior to resumption of operations, interview qualified operator mentors and determine their level of experience and training to act as mentors. Interview operators to check their understanding of the control of equipment and verification of system status, shift routines, operating practices, operations organization and operations administration.

Shift Performance: While observing evolutions and drill response, determine if the facility is effectively implementing out the conduct of operations requirements. Attend shift turnovers, incident critiques, and pre-job briefings. Observe operator rounds, panel walk downs, required reading use, procedure use, response to alarms, and control of system status. Observe briefings for operator mentors and preparation for shift operations.

Records Reviewed:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- DOE OR Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 1 dated 8 January 1996
- Lockheed Martin Energy Systems (LMES) Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 4 January 1996
- DOE OR Operations Office (ORO) Implementation Plan for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 30 January 1996
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994
- (LMES) Y-12 Plan for Continuing and Resuming Operations at the OR Y-12 Plant, dated October 1994
- (LMES) OR Y-12 Disassembly and Assembly (D/A) D/A Disassembly and Storage Organization (DSO) Management Self-Assessment Plan for the Disassembly and Assembly and Quality Support Functions, dated November 1995
- DOE OR Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly Activities Resumption, dated 19 October 1995
- DOE-STD-3006-93 Writing Guide for the Conduct of Operational Readiness Reviews (ORRs) and Readiness Assessments (RAs)

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- Defense Nuclear Facilities Safety Board (DNFSB) letter from the Chairman, Mr. John T. Conway re DNFSB recommendation 94-4, dated 20 December 1995
- Y-12 D/A Conduct of Operations Programmatic Assessment of the Implementation of the applicable chapters of the Nuclear Operations Conduct of Operations Manual for the period of September 1995 through February 1996
- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 Y/AD-627, Rev 1, Mentor Program Description for Y-12 Resumption, dated 12 January 1996
- (LMES) OR Y-12 D/A Memorandum on the Conduct of D/A Drills (no date) of February 1996
- (LMES) OR Y-12 D/A, Critiques of D/A Incidents and Events for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization: Disassembly and Assembly Resumption Training Criteria, Developed by Management Assessments and Compliance, Revision 2 dated February 1996
- Selected Occurrence Reporting System (ORPs) Occurrence Summary Reports, applicable to OR Y-12 for the period of September 1995 through February 1996
- LMES Immediate Action Directive for Management Control Procedure EO-156, Employee Concerns Response, Revision 1 dated January 1996
- LMES Policy, Number ES-LR-400, Freedom to Express Concerns without Reprisal, Revision 2 dated 23 January 1996
- LMES letter from the LMES Vice President for Defense and Manufacturing re: The Clear Definition of Actions Required on Y-12 Order Compliance Program Requests for Approval (RFAs) Prior to Resumption, dated 23 August 1995
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) of 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- (LMES) Y-12 DSO D/A Contractor Request for Approval (RFA) #MMES/Y-12-DOE-5480.19A-CSA-160B re Conduct of Operations dated 7 February 1996
- (LMES) OR Y-12 Y/OA-6238, Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 2 dated 4 January 1996
- (LMES) OR Y-12 Y10-190, Y-12 Plant Management Control, New, dated 12/01/95
- (LMES) OR Y-12 DSO Order Compliance Package for DOE Order 5000.3B, for D/A, (various dates) as of 18 February 1996
- (LMES) OR Y-12 DOS Order Compliance Package for DOE Order 5480.19, for D/A, (various dates) as of 18 February 1996
- DOE ORO Y-12 Site Office Restart Team (Y-SORT) Restart of D/A Activities at the Y-12 Plant Assessment, final report dated 23 February 1996
- (LMES) OR Y-12 DSO Performance Indicator Measures Follow-On Report for D/A dated 21 February 1996
- (LMES) OR Y-12 D/A Individual Resumption Item Closure Criteria for D/A for selected Y-SORT and LMES Assessment Results through 26 February 1996

- (LMES) OR Y-12 D/A Training Lesson Plans for the applicable chapters to be implemented at D/A for the Conduct of Operations, (no dates) as of February 1996
- DOE ORO Y-12 DSO D/A Facility Representative (FR) Assessments for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Drill Guides for the Conduct of D/A Drills, (various dates), for those drills done during this RA, as of February 1996
- D/A Shift Manager's Log
- D/A Temporary Modification Log
- D/A Lockout/Tagout Log
- D/A Quality Organization (QO) Log
- D/A Equipment Status Book
- D/A Deficient Material Condition Log
- D/A Operator Aid Log
- D/A Standing Orders
- D/A Required Reading Book through 28 February 1996

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager
- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Disassembly and Assembly (D/A) Supervisors (4)
- D/A Assemblypersons (14)
- D/A Welder
- D/A Cleaner
- D/A Shift Technical Advisor (STA) (2)
- D/A Mentors (3)
- D/A Process Engineer
- DSO Building Operations/Functional Manager
- DSO Building Operations Manager
- DSO Building Quality Evaluation Operations Manager
- DSO Disassembly and Storage (DSO) Procedures Manager
- DSO Procedure Writer
- DSO Training Manager
- DSO Trainers (2)
- DSO Compliance Manager
- DSO Emergency Preparedness and Drill Program Manager
- DSO Self Assessment and Order Compliance Manager

- o D/A Order Compliance Manager
- o DSO Quality Assurance and Issues Management Manager
- o DSO D/A Conduct of Operations Implementation Manager
- o DSO Health and Safety Implementation Manager
- o DOS Health and Safety Assistant Implementation Manager
- o DOE DSO D/A Facility Representative (FR)
- o DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- o Shift Operations Briefing and Plan of the Day (POD) (4)
- o Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- o DSO Evolution: C-5 Disassembly
- o DSO Part Movement Operation: Walk-in Hood and Scales
- o DSO Quality Organization (QO) Evolution: Radiograph
- o DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- o D/A Drill Briefs (3) and Debriefs (3)
- o D/A Fissile Material Container Storage Abnormal Condition Response Drill
- o D/A Hazardous Spill Reporting and Responding Drill
- o D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: The review of records for this objective included the review of recently completed logs, shift documents, and other plant records of note to assess compliance with conduct of operations principles. It also included the review of shift operating practices, directives for control of on-the-job training, maintenance records, procedures for investigation of abnormal events, procedures for control of system status, evidence that required reading is being read, and operator aid posting. This review was consistent with the present stage of the Y-12 D/A phased implementation of the Conduct of Operations requirements, as discussed below. This Objective overlaps in part the Objective OP.6 of this report.

The logs and records established for D/A are adequate for this stage of maturation in the D/A phased implementation of the Conduct of Operations. Many of the logs or status books have been created within the past few months. Thus, some of the status books contain the instruction or guidance, the notebook dividers for the appropriate sections of the book, and very few actual entries. Some are now due or will soon be due for their quarterly reviews. Three examples of records in this immature condition are the D/A Equipment Status Book, the D/A Temporary Modification Log, and the D/A Deficient Material Condition Log. Some logs and status books are more mature. Examples of mature logs include the D/A Operator Aids Book, the D/A Standing Orders Book, the D/A Required Reading Book, and the Lockout/Tagout Log. These have many entries and have had their periodic

reviews. In both cases (mature or immature books) there are some administrative errors that include the lack of dates with some signatures, and errors in completing the form such as where the signature is in the "date block" and the date is in the "signature block." In at least one case, for the D/A Standing Orders, the periodic review included a very detailed recommendation that some of the D/A Standing Orders should now be canceled or included in other documents. Actions in accordance with that recommendation have not yet been completed. As previously stated, the D/A operating records and logs are adequate, but they need to mature as the implementation of the Conduct of Operations continues.

Interviews: Interviews with the operators and supervisors indicated that they adequately understand the conduct of operations principles, and their personal responsibilities in the performance of their duties. The topics discussed included procedures and their use, operational evolutions, operational tours in their spaces, and the response to unusual operating conditions and events. There were no specific weaknesses noted, and both groups (operators and supervisors) are satisfactorily knowledgeable for safe operations.

D/A is implementing nine of the chapters of the Conduct of Operations for the D/A startup; that effort is about 60% complete by their own Performance Indicator Measures assessments (discussed further in this report). This score is determined by their assessment of the development of the administrative procedures, the completion of training, and their subjective evaluation of the demonstrated maturity of the implementation. The interviews conducted during this RA support their assessment.

In those D/A areas where conduct of operations requirements cannot be met prior to resumption of operations. Mentors are used as compensatory measures to meet the requirements of RFA #MMES/Y-12-DOE-5480.19A-CSA-160B for the Conduct of Operations. Interviews with the qualified operator Mentors indicated that their level of experience and training are adequate for them to act as Mentors in fulfilling this responsibility. There were no significant deficiencies noted in the interviews of the Mentors.

Interviews with the operators to specifically check their understanding of the control of equipment and verification of system status, shift routines, operating practices, operations organization and operations administration indicated that they are satisfactory.

Overall, the interviews of the operations personnel and supervisors indicated that they had an adequate understanding of the conduct of operations principles in the performance of their duties for safe operations, for the control of equipment and system status, and for operating practices and routines, and for operations organization and administration. Their understanding was consistent with the present stage of the Y-12 D/A phased implementation of the Conduct of Operations Requirements. There were no significant deficiencies noted.

Shift Performance: Observations of drills, routine evolutions, normal and abnormal operations confirmed that the Y-12 D/A is implementing these requirements in a phased approach.

Specifically, this CRAD required the demonstration of performance in eight specific areas of the DOE Order 5480.19: Operations organization and administration; Shift routines and operating practices; Control of on-the-job training; Investigation of abnormal events; Control of equipment and system status; Required reading; Timely orders to operators; and Operator aid posting. For ease of discussion each of these specific areas is evaluated below:

- Operations organization and administration: The functioning of the operations organization and administration was observed during four days of operations, evolutions and drills. This included a major handling evolution of the C-5 Assembly, related specific processes to the C-5 Assembly, and three operations drills. During the observations of drills and evolutions, the following deficiencies were identified associated with formality of operations consistent with the expectations of DOE Order 5480.19. Some prejob briefings were not always complete and comprehensive to the degree necessary to insure that all participants had adequate information to successfully complete the task or shift. Lessons learned from previous similar events were not routinely discussed. The scheduling and conduct of prejob and predrill briefings was sometimes delayed due to the absence or late attendance of key personnel, or the lack of copies of administration procedures for the event (drill guide, additional procedures, etc.), or the lack of prior approval or coordination for the event. This is discussed in the Training and Qualification CRAD (TR-6). The Quality Organization's (QO) implementation of the Conduct of Operations is not as mature as the D/A Disassembly and Assembly operational organization's implementation. While the basic Y-12 D/A Organization and Administration is adequate, the functioning of the organization is still in a maturation process. This maturation needs to continue after the completion of this RA as they manage the startup effort to the commencement of routine operations. This is discussed in Objective OP5 and the respective Pre-Start Deficiency OP5-1.

  The use of Mentors is a compensatory measure for the present status of CSA-160B for the implementation of the Conduct of Operations. These Mentors are an active part of the D/A team. There is now a recent strategy for the phase out of the Mentors as the D/A Conduct of Operations phased approach matures. The Mentors are also the primary source on internal D/A programmatic assessments or self-assessments; thus a solid, Operational Self-Assessment program must be implemented at D/A as the Mentors are phased out. The D/A Performance Indicator Measures that are presently evaluated for the status of implementation of the nine (of eighteen) chapters of "Conduct of Operations" that D/A has committed to implementing for startup, give D/A about a 60% overall appraisal. This appraisal is based on the administrative implementation (25% of the

"score"), training (25% of the "score"), and a subjective evaluation of the "maturity" of the implementation (50% of the "score").

- Shift routines and operating practices: The shift routines and operating practices administration were observed during four days of operations, evolutions and drills. This included a major handling evolution of the C-5 Assembly, related specific processes to the C-5 Assembly, and three operations drills. Shift routines and operating practices including operating space activities, shift briefings (4), and communications are adequate. The shift turnover documentation for the past three months indicated that the records contain the required information to support effectively communicating the plant status of safety and significant systems. While the forms were effective, there were several cases noted where they were not filled out completely or correctly. In four cases, an equipment status was indicated as both "operable" and "inoperable." In some cases the status of Criticality Safety Approvals (CSAs) were indicated as "Not in Compliance," but there were few notations or comments. Examples of this included problems with drum drain holes and mislabeling of a storage area. This is also significant in that the time period without corrective action being taken is excessive given that CSA compliance is an Operational Safety Requirement (OSR). On two occasions the Plant Shift Supervisor (PSS) had not provided input to the D/A personnel regarding overnight changes in plant status. Lastly, improvements could be realized through the inclusion of corrective action plans and status in the turnover forms, even if this only includes a summary or list of key steps in the corrective actions. This could help to reduce the time that the conditions are in an abnormal or noncompliance status.The implementation of logkeeping requirements, check sheets, and related operational logs and status boards is in the initial stages of the phased Y-12 D/A implementation. Specific comments and deficiencies on these logs and records are discussed earlier in the Records Review portion of this CRAD.

- Control of on-the-job training: During this RA there was no on-the-job training conducted. Interviews with operating personnel and the review of the records indicated that the control of on-the-job (OJT) training is adequate, however the documentation of the performance of OJT has not been consistent or thorough and needs improvement. This is also discussed within the Training and Qualification (TR) objectives.

- Investigation of abnormal events: During this operating period one specific event demonstrated their ability in this area. In that case, a container of materials used to seal a drain in the C-5 Disassembly area was discovered in the vicinity of a storage array. The investigation and resolution of this matter was adequately handled by the supervisors and operators after the material was discovered. In that resolution, the operators and supervisors first determined that it was not a hazard, but it was a construction material. They identified the probable type of material (sealant) and the reason that it may have been found in this

area. They visually confirmed the material as being the sealant. Then they developed a solution to remove it. Throughout, the coordination between the supervisors, the operators, and the support personnel was good. There were no significant deficiencies noted during that process. Again, the area of the investigation of abnormal events will need additional development as the maturation process continues.

- Control of equipment and system status: The control of equipment and system status was observed during four days of operations, evolutions and drills. This included a major handling evolution of the C-5 Assembly, related specific processes to the C-5 Assembly, and three operations drills. The control of equipment and system status is adequate. Surveillance tracking indicated that in several cases the surveillance completions occurred during the "grace period (i.e. the period + 25%). This practice should be minimized. It was also noted that some other periodic requirements (such as preventive maintenance) were often done on the last day of the period. In some cases this delayed activity then competed with or interfered with the events scheduled for the day. These instances indicate that there is room for improvement in planning and scheduling as the operational pace and practices mature. At this time some of the actual routines for the scheduling and completion of periodic equipment checks (such as the periodic elevator checks) are still being developed by the Operations Manager, the Shift Manager, and the Facility Manager. Again, this area will need additional development as the maturation process continues.

- Required reading: The Required Reading Program has been established and its present implementation is adequate for the phased approach to operations; but all of the required reading appears to have been completed within the last few weeks, with the majority of it being done for all people in the program within a two day period.

- Timely orders to operators: The implementation of a program to ensure Timely Orders to Operators is adequate, again for this stage of implementation of the Conduct of Operations. There are a large number of D/A Standing Orders presently in effect, and which are documented as having been read by the D/A personnel. A review of these entries indicated that they are adequate in clarity and content, but their effectiveness may be limited due to the number of orders. This was also recognized by a recent programmatic assessment by one of the D/A Mentors who recommended that many of these orders should now be canceled or included in other administration to avoid diluting their effect because of the number of Standing Orders.

- Operator aid posting: The implementation of the Operator Aids and their posting has been started and is adequate for this point of the phased approach to the implementation of the Conduct of Operations. Presently there are also a large number of additional hand written signs that have been posted on storage containers and shelves, fork lifts, tool

containers, walls, and passageways. These signs should be evaluated to determine their value, usage, and applicability under the Operator Aids program.

Conclusion: The criteria for this objective have been met consistent within the context of the initial stage of the Y-12 D/A phased implementation of the Conduct of Operations requirements.

Issue(s):

o None.

Reviewer: Robert Baeder	Approved: John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE 4, REV. 1 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements.
(CORE REQUIREMENT #14)

Criteria

Site programs actively promote safety through a broad range of activities possibly including, but not limited to, safety bulletins, lessons learned briefings and/or employee concerns programs. (5480.1B, Ch. IX; 5480.29, para 9.a.)

Contractor personnel will exhibit awareness of the safety-related policies and procedures necessary for daily operations. Personnel will exhibit awareness of requirements for safe operations as set forth in Criticality Safety Approvals, Operational Safety Reviews, and appropriate operating procedures. (5480.19)

Approach

Record Review: Verify the existence and use of mechanisms (policies, procedures, etc.) which promote the identification and promulgation of safety concerns to employees and provide the employee the opportunity to report safety issues.

Interviews: None (Note: Interviews within the scope of this CORE OBJECTIVE are covered within Criteria Review and Approach Documents OP.1, OP.2 and OP.3, covering operations and operations support personnel level of knowledge.)

Shift Performance: None. (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and the level of knowledge of operations support personnel.)

Record Review:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994

- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 Y/AD-627, Rev 1, Mentor Program Description for Y-12 Resumption, dated 12 January 1996
- (LMES) OR Y-12 D/A Memorandum on the Conduct of D/A Drills (no date) of February 1996
- (LMES) OR Y-12 D/A, Critiques of D/A Incidents and Events for the period of September 1995 through February 1996
- Selected Occurrence Reporting System (ORPs) Occurrence Summary Reports, applicable to OR Y-12 for the period of September 1995 through February 1996
- LMES Policy, Number ES-LR-400, Freedom to Express Concerns without Reprisal, Revision 2 dated 23 January 1996
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) of 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- DOE ORO Y-12 DSO D/A Facility Representative (FR) Assessments for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Drill Guides for the Conduct of D/A Drills, (various dates), for those drills done during this RA, as of February 1996
- D/A Shift Manager's Log
- D/A Temporary Modification Log
- D/A Lockout/Tagout Log
- D/A Quality Organization (QO) Log
- D/A Equipment Status Book
- D/A Deficient Material Condition Log
- D/A Operator Aid Log
- D/A Standing Orders
- D/A Required Reading Book through 28 February 1996

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager
- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Supervisors (4)
- D/A Assemblypersons (14)
- D/A Welder
- D/A Cleaner

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- o D/A Shift Technical Advisor (STA) (2)
- o D/A Mentors (3)
- o D/A Process Engineer
- o D/A Building Quality Evaluation Operations Manager
- o DSO Procedures Manager
- o DSO Procedure Writer
- o DSO Training Manager
- o DSO Trainers (2)
- o DSO Compliance Manager
- o DSO Emergency Preparedness and Drill Program Manager
- o DSO Self Assessment and Order Compliance Manager
- o D/A Order Compliance Manager
- o DSO Quality Assurance and Issues Management Manager
- o DSO D/A Conduct of Operations Implementation Manager
- o DSO Health and Safety Implementation Manager
- o DSO Health and Safety Assistant Implementation Manager
- o DOE DSO D/A Facility Representative (FR)
- o DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- o Shift Operations Briefing and Plan of the Day (POD) (4)
- o Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- o DSO Evolution: C-5 Disassembly
- o DSO Part Movement Operation: Walk-in Hood and Scales
- o DSO Quality Organization (QO) Evolution: Radiograph
- o DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- o D/A Drill Briefs (3) and Debriefs (3)
- o D/A Fissile Material Container Storage Abnormal Condition Response Drill
- o D/A Hazardous Spill Reporting and Responding Drill
- o D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: Records reviews indicate that programs are in place to facilitate and promote open communications and increased awareness concerning safety, health and the environment at the Y-12 plant. There are many programs that fold together to promote and expand a site wide ES&H culture. These programs such as Employee Concerns Program, Performance Measurement Teams, Lessons Learned Program, ES&H committee programs and bulletins are well organized and focused to involve participants from all levels. In addition, the safety organization has conducted surveys based upon an International Atomic Energy Agency (IAEA) guidance document 75-INSAG that indicated that the safety culture has reached both craft and management. This survey covered approximately 20% of the population of DSO and the Quality Organization that supports D/A operations.

RA ASSESSMENT FORM 1
Operations

Interviews: Interviews were conducted with the many individuals listed above to discuss their understandings of programs and formal mechanisms available which promote the identification and promulgation of ES&H concerns. Employees are provided the opportunity to report safety issues. Many of the assembly persons and supervisors indicated that there was a very open atmosphere for the discussion of their concerns regarding ES&H issues, and that their concerns were generally acted upon. No one interviewed had ever used the Employee Concern Program. These individuals felt all their concerns had been acted on appropriately by their supervisors and management.

Shift Performance: Observations of evolutions and drills indicated a primary focus was placed on potential ES&H issues. Several times these operations would be stopped and the proper steps taken to alleviate a potential concern no matter how remote. ES&H issues were discussed during POD briefings and pre-job briefings. All participants showed an interest in improving ES&H performance.

Conclusion:

The criteria for this objective have been met.

Issue(s):

None

Reviewer: David Allen	Approved: John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE 5, REV. 2 DATE: March 5, 1996	CRITERIA MET	
		YES ___	NO X

OBJECTIVE: An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators. **(CORE REQUIREMENT #10)**

Criteria

The appropriate restart programs are developed for the identified processes and the processes are fully operable to perform their intended function. The restart programs document the operability of the equipment that has been in the stand-down mode, the usefulness of the procedures, and the relevance of the training to the intended use of the restarted equipment. (5480.31, Attachment II, para 10)

Approach

Record Review: Evaluate the status of actions under the Implementation Plan. Ensure a phased approach to normal operations and inclusion of procedures, operator qualification and equipment startup testing as required.

Interviews: None (Note: Interviews within the scope of this CORE OBJECTIVE are covered within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and operations support personnel level of knowledge.)

Shift Performance: None (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents 1-3, covering operations and the level of knowledge of operations support personnel.)

Records Reviewed:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- DOE OR Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 1 dated 8 January 1996
- Lockheed Martin Energy Systems (LMES) Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 4 January 1996

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- DOE OR Operations Office (ORO) Implementation Plan for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 30 January 1996
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994
- (LMES) Y-12 Plan for Continuing and Resuming Operations at the OR Y-12 Plant, dated October 1994
- (LMES) OR Y-12 Disassembly and Assembly (D/A) D/A Disassembly and Storage Organization (DSO) Management Self-Assessment Plan for the Disassembly and Assembly and Quality Support Functions, dated November 1995
- DOE OR Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly Activities Resumption, dated 19 October 1995
- Defense Nuclear Facilities Safety Board (DNFSB) letter from the Chairman, Mr. John T. Conway re DNFSB recommendation 94-4, dated 20 December 1995
- Y-12 D/A Conduct of Operations Programmatic Assessment of the Implementation of the applicable chapters of the Nuclear Operations Conduct of Operations Manual for the period of September 1995 through February 1996
- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 Y/AD-627, Rev 1, Mentor Program Description for Y-12 Resumption, dated 12 January 1996
- LMES letter from the LMES Vice President for Defense and Manufacturing re: The Clear Definition of Actions Required on Y-12 Order Compliance Program Requests for Approval (RFAs) Prior to Resumption, dated 23 August 1995
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) dated 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- (LMES) Y-12 DSO D/A Contractor Request for Approval (RFA) #MMES/Y-12-DOE-5480.19A-CSA-160B re Conduct of Operations dated 7 February 1996
- (LMES) OR Y-12 Y/OA-6238, Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 2 dated 4 January 1996
- (LMES) OR Y-12 Y10-190, Y-12 Plant Management Control, New, dated 12/01/95
- DOE ORO Y-12 Site Office Restart Team (Y-SORT) Restart of D/A Activities at the Y-12 Plant Assessment, final report dated 23 February 1996
- (LMES) OR Y-12 D/A Individual Resumption Item Closure Criteria for D/A for selected Y-SORT and LMES Assessment Results through 26 February 1996

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Shift Manager
- D/A Facility Manager
- D/A Mentors (3)

- DSO Compliance Manager
- DSO Self Assessment and Order Compliance Manager
- D/A Order Compliance Manager
- DOE DSO D/A Facility Representative (FR)
- DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- Shift Operations Briefing and Plan of the Day (POD) (4)
- Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- DSO Evolution: C-5 Disassembly
- DSO Part Movement Operation: Walk-in Hood and Scales
- DSO Quality Organization (QO) Evolution: Radiograph
- DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- D/A Drill Briefs (3) and Debriefs (3)
- D/A Fissile Material Container Storage Abnormal Condition Response Drill
- D/A Hazardous Spill Reporting and Responding Drill
- D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: The startup planning documentation referenced was reviewed to determine how graded operations had been factored into the restart effort. This planning documentation includes several restart plans, a resumption plan, a restart team assessment plan, and closure criteria for Y-SORT and LMES Assessments. However, an appropriate restart program has not been developed that meets the specific criteria of this CRAD: "The appropriate restart programs are developed for the identified processes and the processes are fully operable to perform their intended function. The restart programs document the operability of the equipment that has been in the stand-down mode, the usefulness of the procedures, and the relevance of the training to the intended use of the restarted equipment. (5480.31, Attachment II, para 10)" The Y-12 D/A implementation plans to date have specifically focused on the completion of the respective evaluations of the DOE Order 5480.31 process for the commencement of operations.

Y-12 D/A needs to develop an organized startup plan to complete corrective action and final requirements for the commencement of the D/A operations. This plan should have adequate detail to describe how graded operations validate the procedure viability, the equipment readiness, and the training of operators. This document should be controlled by a change control process to assure continued graded operations during the resumption effort. Such a plan should be integrated with the DOE ORO oversight plan discussed in the Management (MG) section of the RA report. (MG7-1)

Thus, the criteria of this objective to develop an adequate startup or restart test program that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators has not been met.

Interviews: None.

Shift Performance: None.

Conclusion: The criteria for this objective have not been met.

Issue(s):

- An adequate startup plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators. (OP5-1)

Reviewer: Robert Baeder	Approved: John Rothrock

RA DEFICIENCY FORM 2
Operations

Functional Area: OP	Objective No.: 5	Finding__X___ Observ._____	Pre-Start__X__ Post-Start____	Issue No.: OP.5-1 Rev. No.: 2 Date: 03/05/96

ISSUE: An adequate startup plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators.

REQUIREMENT: A startup plan is required to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators.

REFERENCE(S): DOE Order 5480.31, Attachment II, paragraph 10.

DISCUSSION: The Y-12 Disassembly and Assembly (D/A) Implementation Plans to date have focused on the completion of the respective evaluations of the DOE Order 5480.31 process for the commencement of operations. At present the Y-12 D/A does not have a startup plan to complete corrective action and final requirements to manage the startup effort. Thus, the criteria of this objective are not met.

Issues related to this startup plan are included in the Management (MG) issue MG7-1, and the Training and Qualification (TR) issue TR1-2.

CONCLUSION: The Y-12 management needs to develop an adequate startup plan for D/A activities that includes plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators. This is considered a pre-start finding.

Reviewer: Robert Baeder	Approved: John Rothrock

RA DEFICIENCY FORM 2
Operations

FUNCTIONAL AREA: OP	OBJECTIVE 6, REV. 2 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: A baseline compliance status review of Department of Energy Orders 5000.3B and 5480.19 has been performed. Noncompliance items have been addressed. Documentation of compensatory measures is complete and are understood by contractor and Department of Energy Y-12 Site Office personnel. **(CORE REQUIREMENT #7)**

Criteria

Noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board, especially Department of Energy Orders 5000.3B and 5480.19, have approved schedules for gaining compliance and if the actions described in the Request for Approvals have been adequately addressed for the facility/activity. Operations managers and Department of Energy Y-12 Site Office personnel have reviewed the compensatory measures and corrective actions taken to address the nonconformances. A program for periodic management assessment of the continued need and adequacy of compensatory measures is implemented. (Y/AD-623, Standards/Requirements Implementation Assessment Instruction)

Approach

Record Review: Review the order compliance package for Department of Energy Orders 5000.3B and 5480.19, including the applicable Compliance Schedule Agreement, exemptions and compensatory measures. For identified Request for Approvals, verify schedule commitments have been met and compensatory measures identified. Verify that documentation of compensatory measures is complete and that there is a documented program for periodic assessment of compensatory measures.

Interviews: For order requirements not fully implemented, determine if management understands areas of noncompliance and actions necessary for full implementation. In addition, determine if management is aware of any required compensatory measures associated with these noncompliances. Interview selected Department of Energy Y-12 Site Office personnel to determine their understanding of compensatory measures, when they are required, and when they can be removed.

Shift Performance: None. (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and the level of knowledge of operations support personnel.

RA DEFICIENCY FORM 2
Operations

Records Reviewed:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- DOE OR Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 1 dated 8 January 1996
- Lockheed Martin Energy Systems (LMES) Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 4 January 1996
- DOE OR Operations Office (ORO) Implementation Plan for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 30 January 1996
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994
- (LMES) Y-12 Plan for Continuing and Resuming Operations at the OR Y-12 Plant, dated October 1994
- (LMES) OR Y-12 Disassembly and Assembly (D/A) D/A Disassembly and Storage Organization (DSO) Management Self-Assessment Plan for the Disassembly and Assembly and Quality Support Functions, dated November 1995
- DOE OR Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly Activities Resumption, dated 19 October 1995
- DOE-STD-3006-93 Writing Guide for the Conduct of Operational Readiness Reviews (ORRs) and Readiness Assessments (RAs)
- Defense Nuclear Facilities Safety Board (DNFSB) letter from the Chairman, Mr. John T. Conway re DNFSB recommendation 94-4, dated 20 December 1995
- Y-12 D/A Conduct of Operations Programmatic Assessment of the Implementation of the applicable chapters of the Nuclear Operations Conduct of Operations Manual for the period of September 1995 through February 1996
- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 Y/AD-627, Rev 1, Mentor Program Description for Y-12 Resumption, dated 12 January 1996
- (LMES) OR Y-12 D/A Memorandum on the Conduct of D/A Drills (no date) of February 1996
- (LMES) OR Y-12 D/A, Critiques of D/A Incidents and Events for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization: Disassembly and Assembly Resumption Training Criteria, Developed by Management Assessments and Compliance, Revision 2 dated February 1996
- Selected Occurrence Reporting System (ORPs) Occurrence Summary Reports, applicable to OR Y-12 for the period of September 1995 through February 1996
- LMES Immediate Action Directive for Management Control Procedure EO-156, Employee Concerns Response, Revision 1 dated January 1996

RA DEFICIENCY FORM 2
Operations

- LMES Policy, Number ES-LR-400, Freedom to Express Concerns without Reprisal, Revision 2 dated 23 January 1996
- LMES letter from the LMES Vice President for Defense and Manufacturing re: The Clear Definition of Actions Required on Y-12 Order Compliance Program Requests for Approval (RFAs) Prior to Resumption, dated 23 August 1995
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) of 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- (LMES) Y-12 DSO D/A Contractor Request for Approval (RFA) #MMES/Y-12-DOE-5480.19A-CSA-160B re Conduct of Operations dated 7 February 1996
- (LMES) OR Y-12 Y/OA-6238, Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 2 dated 4 January 1996
- (LMES) OR Y-12 Y10-190, Y-12 Plant Management Control, New, dated 12/01/95
- (LMES) OR Y-12 DSO Order Compliance Package for DOE Order 5000.3B, for D/A, (various dates) as of 18 February 1996
- (LMES) OR Y-12 DSO Order Compliance Package for DOE Order 5480.19, for D/A, (various dates) as of 18 February 1996
- DOE ORO Y-12 Site Office Restart Team (Y-SORT) Restart of D/A Activities at the Y-12 Plant Assessment, final report dated 23 February 1996
- (LMES) OR Y-12 DSO Performance Indicator Measures Follow-On Report for D/A dated 21 February 1996
- (LMES) OR Y-12 D/A Individual Resumption Item Closure Criteria for D/A for selected Y-SORT and LMES Assessment Results through 26 February 1996
- (LMES) OR Y-12 D/A Training Lesson Plans for the applicable chapters to be implemented at D/A for the Conduct of Operations, (no dates) as of February 1996
- DOE ORO Y-12 DSO D/A Facility Representative (FR) Assessments for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Drill Guides for the Conduct of D/A Drills, (various dates), for those drills done during this RA, as of February 1996
- D/A Shift Manager's Log
- D/A Temporary Modification Log
- D/A Lockout/Tagout Log
- D/A Quality Organization (QO) Log
- D/A Equipment Status Book
- D/A Deficient Material Condition Log
- D/A Operator Aid Log
- D/A Standing Orders
- D/A Required Reading Book through 28 February 1996

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager

RA DEFICIENCY FORM 2
Operations

- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Disassembly and Assembly (D/A) Supervisors (4)
- D/A Assemblypersons (14)
- D/A Welder
- D/A Cleaner
- D/A Shift Technical Advisor (STA) (2)
- D/A Mentors (3)
- D/A Process Engineer
- DSO Building Operations/Functional Manager
- DSO Building Operations Manager
- DSO Building Quality Evaluation Operations Manager
- DSO Disassembly and Storage (DSO) Procedures Manager
- DSO Procedure Writer
- DSO Training Manager
- DSO Trainers (2)
- DSO Compliance Manager
- DSO Emergency Preparedness and Drill Program Manager
- DSO Self Assessment and Order Compliance Manager
- D/A Order Compliance Manager
- DSO Quality Assurance and Issues Management Manager
- DSO D/A Conduct of Operations Implementation Manager
- DSO Health and Safety Implementation Manager
- DSO Health and Safety Assistant Implementation Manager
- DOE DSO D/A Facility Representative (FR)
- DOE Y-12 Site Operations Office D/A Representative

<u>Shift Performance Evolution:</u>

- Shift Operations Briefing and Plan of the Day (POD) (4)
- Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- DSO Evolution: C-5 Disassembly
- DSO Part Movement Operation: Walk-in Hood and Scales
- DSO Quality Organization (QO) Evolution: Radiograph
- DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- D/A Drill Briefs (3) and Debriefs (3)
- D/A Fissile Material Container Storage Abnormal Condition Response Drill
- D/A Hazardous Spill Reporting and Responding Drill
- D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

RA DEFICIENCY FORM 2
Operations

Discussion of Results:

Record Review: The review of records for this objective included the review of the order compliance package for Department of Energy Orders 5000.3B and 5480.19, including the applicable Compliance Schedule Agreement, exemptions, and compensatory measures. These compliance packages are adequate. For the identified Request for Approvals, the schedule commitments have been met, and compensatory measures have been identified. The documentation of compensatory measures is complete and there is a documented program for periodic assessment of compensatory measures. This review was consistent with the Y-12 D/A phased implementation of the Conduct of Operations requirements.

There were some administrative deficiencies identified during this review. Some of the action plan packages and some closure packages for corrective actions associated with RFA #MMES/Y-12-DOE-5480.19A-CSA-160B were not always completed in accordance with their prescribed procedures. Examples of these administrative errors included missing dates next to signatures, missing check marks in some blocks on the administrative forms, and some missing notations or comments that were required by their administrative forms. The DSO and Quality Organization is working to improve the administration of these packages.

In addition and specifically, the number of days to the issuance of the final report version for the Occurrence Report has not always met the DOE Order 5000.3B requirement; this is known to the Y-12 DSO and Quality Organization, they are tracking the length of time to the completion of these reports, and they are working to meet the 5000.3B requirements.

D/A is implementing nine of the chapters of the Conduct of Operations for the D/A startup; that effort is about 60% complete by their own Performance Indicator Measures assessments (discussed further in this report). The review of records of the compliance package and the associated D/A records and logs support this 60% assessment. The review of records to assess the implementation status of these orders is further discussed in OP.3.

Interviews: For those order requirements that are not fully implemented, the interviews indicated that the management understands the areas of noncompliance and actions necessary for full implementation. In those D/A areas where conduct of operations requirements cannot be met prior to resumption of operations, mentors are used as compensatory measures to meet the requirements of RFA #MMES/Y-12-DOE-5480.19A-CSA-160B for the Conduct of Operations. Interviews with the qualified operator Mentors indicated that their level of experience and training are adequate for them to act as Mentors in fulfilling this responsibility. It was also determined that the management is aware of the required compensatory measures associated with these noncompliances. Interviews revealed that Department of Energy Y-12 Site Office personnel understand the compensatory measures, when they are required, and when they can be removed.

Shift Performance: None.

RA DEFICIENCY FORM 2
Operations

Conclusion: The criteria for this objective have been met.

Issue(s):

None.

Reviewer: Robert Baeder	Approved: John Rothrock

RA ASSESSMENT FORM 1
Procedures

FUNCTIONAL AREA: PR	OBJECTIVE 1, REV. 3 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: There are adequate and correct procedures for operating systems and utility systems. **(CORE REQUIREMENTS 1, 15, and 18)**

Criteria

Criticality Safety Approvals and operating procedures applicable to disassembly/assembly activities (refer to "Disassembly/Assembly Procedures (U)", dated January 4, 1996) are technically accurate, consistent with each other, and incorporate the appropriate safety limits. A viable system for the control of the issuance and use of procedure revisions by the field and by the training organizations exists. (5480.19, Ch. XVI; 5700.6C, para 9.b.(2)(a); 4330.4B, Ch. II, Section 6, 5480.22, para 9)

Approach

For Criticality Safety Approvals contained in Appendix II of the Oak Ridge Y-12 Site's Readiness Assessment Plan-of-Action, and procedures listed in document "Disassembly/Assembly Procedures", dated January 4, 1996, review validation, walk down, and reviewer comments for recent procedure changes on safety systems. Review procedures for implementation of the safety envelope. Assess the adequacy of the review and approval process for procedures and changes to procedures. Review documented basis for test acceptance criteria. Assess the currency of procedures and verify that current configuration of safety systems is reflected in operations, maintenance and surveillance procedures.

Interviews: Interview operators and supervisors to assess their understanding of the temporary procedure change process, and how they verify the latest approved revision of a procedure. Interview support staff personnel responsible for procedure writing and revision to assess their understanding of procedure control requirements, validation process, and implementation of safety requirements. Interview operators and supervisors to assess their understanding of site procedure compliance policy. Interview personnel from the field and training organizations to ensure that they understand the system for control of the issuance and use of procedural revisions.

Shift Performance: While observing evolutions and drill response, determine if the facility is operating with current, approved procedures (with valid changes if applicable) which allow full compliance and execute the required function. Determine if the facility procedures are adequate in content, level of detail, and acceptance criteria, and if they properly implement safety requirements. If temporary procedure changes are

necessary, assess the steps taken by an operator and his supervisor in the review and approval process. Verify that procedures used by the operators are properly controlled to ensure only the latest revision is used. Verify that operators are following site procedure compliance policy.

Records Reviewed:

- Y10-102 "Technical Procedure Process Control", 10/1/95
- Y10-103 "Writer's Guide for Y-12 Plant Operating Procedures", 6/25/91
- Y10-01-201 "Conduct of Drills", 7/27/95
- Y10-135 "Command Media Development at the Y-12 Plant", 2/10/95
- Y50-53-SO-031, 2/9/96, "Surveillance of Criticality Accident Alarm System for Building 9204-2E", supersedes 12/1/95; Use Category II
- Y50-53-SO-032 "Surveillance of Criticality Accident Alarm System for Building 9204-2, 2/9/96, Use Category II
- Y50-55-PT-415, 6/7/95, Operating procedure; Class III
- Y50-55-PT-409 "Operation of 100 Kv Norelco" 10/11/95, Use Category II
- Y50-55-PT-374 "Operation of 9MEV Linac 9204-2E", 2/11/96, Class II
- Y50-55-PT-402 "Operation of 300 Kv Norelco, 6/21/95, Class II
- Y70-01-150 "General Nuclear Criticality Safety Requirements", 3/15/95, Class II
- Y50-55-PT-303 "Positive Pressure Glove Boxes" 10/91/95, Use Category III
- Y70-01-150-6 "General Nuclear Criticality Safety Requirements" , 1/31/96
- Y50-55-PT-431 "Metallographic Processing of Oralloy Materials" , 2/23/96, Class II
- Y50-55-PT-415 "Vibration Test Station", 2/23/96, Use Category III
- Y50-01-B2-013 "Mop-Water and Mop-Head Disposal", 2/19/96, Use Category II
- Y50-01-B2-025 "Walk-In Ventilation Hood Operations", 1/12/96, Use Category II
- Y50-01-B2--024 "PCDAS Oven Operation for Drying Nonfissile Material" , 2/15/96, Use Category II
- "Disassembly Instructions", 2/26/96, Rev G., Use Category II
- "Radiography Testing Procedure", 9/20/95, Rev. B
- "Quality Evaluation Disassembly Procedure", 12/12/95, Rev. G
- "Follow Sheet" check lists for assembly
- Y50-51-FO-003 "Monthly and Quarterly Fire Protection Surveillances - Wet Pipe Sprinkler Systems 4, 5, 8, and 11 in Building 9204-2", 2/19/96, Use Category II,
- Y50-51-FO-005 "Monthly, Quarterly, and Annual Fire Protection Surveillances - Firecycle Sprinkler System 6 in Building 9204-2", 2/19/96, Use Category II
- Y50-55-PT-447 "Operating the Tinius Olsen 30K Machine", 10/13/95, CANCELED
- Y50-55-PT-433 "Compression Testing of Uralloy Material - 60K Machine", Class III, 2/24/96
- Y50-55-PT-437 "Tensile Testing of Various Materials", 6/1/95, Class III
- Y50-55-PT-462 "Compression Testing of Depleted Uranium/Uranium Alloys - 60K Machine", 10/2/95, Class III
- Y50-55-PT-460 "Tensile Testing of Depleted Uranium/Uranium Alloys - 60K Machine", 10/30/95, Use Category III

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- Y50-55-DI-028 "Benchmark Tools", 8/9/95
- "Product Inspection Document - Weldring Assembly", Rev. B
- Drill Guide 2-0006, Hazardous Spill Reporting and Responding Rev. A
- Y-12 Nuclear Operations, Conduct of Operations Manual, Martin Marietta Energy Systems, Inc.
- 9204-2E-95-033 "Weapon Product Definition Configuration Management", 10/13/95

Interviews Conducted:

- DSO Procedures Manager
- DSO Procedures Coordinator
- DSO Criticality Safety Coordinator
- QO Technical Manager for Procedures, Training, and Document Control
- QO Procedure Coordinator
- QO Division Procedure Coordinator
- QO Training Specialist
- QO Procedures Manager
- DSO Shift Technical Advisor
- DSO Disassembly Technician
- DSO Welder
- DSO Shift Manager
- DSO Operations Assistant
- DSO D/A Supervisor
- QO Manager
- Operations Mentor
- QO Inspection Methods Engineer
- DSO Staff Engineer
- Fire Officer
- Y12 ESAMS Administrator
- DSO Procedure Writer
- Maintenance Shift Supervisor
- QO Inspection Technologist - Mechanical Properties

Shift Performance Evolution:

- C-5 Mockup Disassembly
- Weldrings Dimensional Inspection
- Materials Testing Laboratory, Room 311; Tensile Test
- QO Radiography for Mockup Assembly
- Wet Pipe Sprinkler System 2 in Building 9204-2E Monthly and Quarterly Fire Protection Surveillance
- Drill # 2 - Hazardous Spill
- Drill # 3 - Special Drill Scenario - Injured and Contaminated Worker

Discussion of Results:

Record Reviews: Approximately thirty technical procedures applicable to the Disassembly and Storage Organization (DSO) and the Quality Organization (QO) were reviewed to assess the adequacy of the review and approval process for procedures and changes to procedures. A major effort to revise and upgrade procedures has been in place since the September 1995 revisions to Y10-102, "Technical Procedure Process Control". A significant amount of management attention was directed toward improving procedures applicable to DSO and lessons learned from the Receipt, Storage, and Shipment (RSS) restart efforts were promptly applied. These lessons learned were not immediately applied to the QO procedure upgrades and as a result the QO procedure upgrade progress is behind DSO. Additional resources to support the QO procedure upgrades were not applied until about one month before the start of this readiness assessment. A new manager of Procedures, Training, and Document Control for QO was named at the commencement of this readiness assessment. Current actions to upgrade the QO procedures are appropriate.

As a result of the procedure upgrade process, DSO identified many procedures that required revision. Forty-seven procedures have been revised. Most remaining changes are of an administrative nature. QO identified 26 procedures requiring revision. Only nine have been revised. Of the 17 procedures remaining to be revised, seven have CSA revision requirements to be implemented. Four of these address dimensional inspection procedures, and three address materials and equipment evaluations. One of the dimensional inspection procedures, Y5-55-DI-008, is listed as a resumption pre-start item in the LMES Readiness Assessment findings. This is considered an appropriate disposition for this finding. The remaining dimensional inspection procedures, Y5-55-DI-020/023/208, are scheduled to be revised by July 1996. The three materials and equipment evaluation technical procedures, Y50-55-PT-374/454/455, also involve the incorporation of CSA requirements from product specifications. The schedule for accomplishing these revisions is adequate to support resumption efforts. Continued management attention is required to ensure the schedule is met.

Some procedures reviewed were noted to contain Asterisk Rectangular Boxes to denote facility safety requirements and the use of angle brackets (< >) and bold text within the angle brackets for such features as CSAs in accordance with Change Directive Number 10-103-04, Sections VII. K.2.m and K.2.n. This marking is being correctly utilized.

A revision of Y10-102 issued in September 1995 requires a more definitive use of categorization of procedures. The change is in keeping with the definitions of Chapter 16 of the Nuclear Operations Conduct of Operations Manual. Appendix J of Y10-102 uses a similar graded definition of Use Categories ranging from accessible to the performer (Category III) and step-by-step (Category II) to near at hand to the operation, open to the page being performed, step-by-step compliance, and signoff at appropriate points (Category I). None of the procedures examined for DSO and QO were specified as Category I. The majority of

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DSO procedures are Category II. Most of the QO procedures have not yet been revised to the new requirements of Y10-102. These categorizations are appropriate, based on the hazards of the operations being conducted.

Some procedures contain warnings that do not convey the appropriate level of safety concern. For example, warnings like "Failure to evacuate personnel from the vault prior to energizing the Linac may cause serious personal injury" found in procedure Y50-55-PT-374 "Operation of 9MEV Linac 9204-2E", 2/11/96, Class II are misleading. Conversely an example of an adequate warning is found in the same procedure, "Serious injury or death may result from contact with high voltage circuits or heat producing components in the modulator. DO NOT touch...". The latter example is more in keeping with Y10-103, Section VII, I.

Improved procedure history files and more adequate records of verification and validations are noted improvements to the procedures program. The history files for recent revisions to procedures for QO indicate that the revision process is being conducted in accordance with Y10-102 with records of verification and validation and USQ screens being a part of the process. In the document review, the recently revised procedures (under Y10-102) examined for CSA references were adequate where such references were appropriate.

The verification and validation process has been revised in accordance with Y10-102 and is being effectively used. As an example, procedure Y50-55-PT-447 has been canceled as the result of the mentor/SME walkdown process. It was determined during the verification and validation process that the individual procedure was not needed. The information in this procedure was incorporated in a single procedure that combined test and machine parameters.

Some minor errors were noted in some of the procedures examined. For example, Y50-55-PT-460 contains a lined out entry that was corrected with an "ok" but was not initialed. This indicates an inattention to detail of the documentation requirements of the change process on the part of the person making the change, even if the change was not needed.

Procedure Y50-55-PT-303 "Positive Pressure Glove Boxes" is currently being revised to correct numerous LMES identified errors. The revision process should include pressure ranges for the pressure gauges and some indication of what criteria are applied to the requirement of "no deterioration or damage to gloves and exhaust boot". QO procedures personnel have indicated that the current revision of the procedure is addressing these two issues among the numerous self-identified errors in this procedure.

A Mentor Performance Indicator Measures Follow-on Report, 2/21/96, reports that implementation of DOE 5480.19, "Conduct of Operations for DOE Facilities", Chapter 16, Operations Procedures was about 60% complete for Building 9204-2E. Of the procedures examined for Building 9204-2E, CSAs were incorporated. The same approximate percentage applied to evidence that the requirements of the new revision of Y10-102 had been used.

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Procedures

Long term Order 9204-2E-95-003 "Weapon Product definition Configuration Management" was reviewed for consistency with procedure requirements. The order issued instructions for the Product Engineering Transmittal process (associated with procedure releases), effective dates, and incorporation of pen-and-ink changes. It was determined that this order's instructions are consistent with current procedural requirements.

Interviews: Operators and supervisors were interviewed to assess their understanding of the procedure and procedure change process. The interviews conducted concentrated on D/A personnel but included other personnel as needed. Support personnel from maintenance and the Fire Department and the ESAMS administrator were interviewed. Local DOE representatives were also questioned during the process where needed to clarify particular points.

Not all of the interviewed D/A personnel demonstrated a good understanding of the current procedure change process using a Procedure Modification Request as designated in Y10-102, Section B. Some were not aware that steps like Validation and Verification (V&V) and Unreviewed Safety Question (USQ) screens were needed for procedure revisions. Of the three persons questioned concerning non-intent versus intent changes, all were cognizant both of the differences and the relative significance of each.

Of D/A personnel questioned regarding the procedure process (writing, revision, and use), only one had a less than adequate general understanding of the procedure process for the facility. This person occupied a peripheral position within the organization. While the position occupied was peripheral, this person should possess a deeper knowledge of the procedure process. Without exception, all of the D/A personnel interviewed had a good understanding of the concept of working copies of procedures, the mechanics of working copies, how to obtain working copies, and what to do if the copy is out of date.

All of the D/A personnel interviewed concerning procedure use were sufficiently familiar with the stop and recover requirement if difficulties are encountered with the evolution of a procedure. The requirement for this action is from Chapter 16 of the LMES Nuclear Operations Conduct of Operations Manual.

Shift Performance: Five shift evolutions were observed during the RA. The first evolution, the C-5 mockup disassembly was conducted using a supervisor as a reader and two technicians within the work area. A copy of the latest version of the procedure was used by both the supervisor/reader and the data recorder outside the work area. The evolution was conducted in a step-by-step manner as required by both the technical procedure designation, the Nuclear Operations Conduct of Operations Manual, and Y10-102. The same observations applied to the Weldrings Dimensional Inspection which was the second evolution.

An evolution of materials testing for tensile strength was conducted by QO personnel. Evolution personnel followed the procedure as required in a step-by-step manner with a reader and worker. The working copy of the procedure was

verified as current. The observer was provided a duplicate of the working copy that was stamped "Information Only" in red ink to differentiate it from the working copy being used for the evolution. This practice is assessed as adequate.

An evolution of radiography of a mockup was observed. The pre-job brief was professionally conducted and included elements of Conduct of Operations and the necessary health and safety precautions. The mockup was properly transported from the storage array and the evolution conducted in accordance with a working copy of the current procedure. The evolution was satisfactory with step-by-step adherence to the procedure.

The final evolution observed was a monthly OSR surveillance simulation for the Wet Pipe Sprinkler System 2 for Building 9204-2E. The pre-job brief was thorough and Fire Department personnel used an in-hand working copy of the procedure. The exterior valve position was verified and valve pressures in the basement noted. Fire Department personnel were knowledgeable on the use of the procedure, the need for locks and chains, and the acceptance criteria associated with the >55 psig gauge pressure referenced in the procedure appendix. The surveillance was conducted satisfactorily.

Two drills were observed. The first, the hazardous spill evolution (Drill # 2), failed to incorporate the lessons learned from previous drills into the protocol. During the pre-job brief, the Facility Senior Drill Monitor attempted to alter the written protocol for the drill because of the lack of using lessons learned. However, Y10-01-210 would not allow the affected sections of Drill Guide 2-0006, Rev. A to be revised with pen and ink changes as opposed to a complete revision. Therefore, the drill was executed as written. The special drill (Drill # 3) was conducted with no procedural problems.

Conclusion: Procedures for D/A are adequate, contain sufficient detail and properly implement the needed safety requirements. CSA requirements have not yet been fully implemented in the Quality Organization procedures. The lack of implementation of the CSA revisions has been previously identified by a LMES RA as pre-start and post-start findings. This is an appropriate disposition of the findings. The criteria for this objective have been met.

Issue(s):

o None

Reviewer: Lon Brock/Tom Donovan	Approved: John Rothrock

RA ASSESSMENT FORM 1
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FUNCTIONAL AREA: SE	OBJECTIVE 1, REV. __ DATE: March 4, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: There are adequate and correct safety limits for operating systems. **(CORE REQUIREMENT #1)**

Criteria

The Operational Safety Requirements for disassembly/assembly facilities are technically accurate and consistent with the physical facility configuration. The designated equipment and systems are present as described in the Operational Safety Requirements and the Operational Safety Requirements can be technically accomplished. Compliance with the applicable Operational Safety Requirements are verified. (5480.22, para 9.e, 5480.19, Ch. XVI)

Approach

Record Review: Review several safety requirements and decide if the associated operating, and maintenance procedures correctly set up the limiting conditions. Verify these limits are specified in sufficient detail and rigor to allow unambiguous measurements (clear pass/fail criteria). Verify that the Operational Safety Requirements for the facilities are technically accurate and consistent with the physical facility configuration. Verify compliance with the applicable Operational Safety Requirements.

Interviews: Interview a cross section of management, operations, and maintenance personnel to ensure that personnel are knowledgeable in the significance of the safety limits and have a general knowledge of their basis.

Shift Performance: Observe the performance of surveillances and operator rounds to determine if safety system parameters used to verify compliance with safety requirements can be accurately verified, and that procedures adequately provide for prompt corrective action and communications upon the identification of an out of normal condition. Verify safety system configurations through walk downs. Verify that the designated equipment and systems are present as described in the Operational Safety Requirements and that the Operational Safety Requirements can be technically accomplished.

Records Reviewed:

- Y/ENG/SAD-021, System Analysis Document, Criticality Accident Alarm System, dtd 6/10/94

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- Y/TS-816 FSAR Assembly, Disassembly & Warehouse Project dtd 9/86
- Disassembly & Assembly Criticality Safety Approvals
- System Analysis Document, Criticality Accident Alarm System, Y/ENG/SAD-021, 6/15/94
- Y/TS-1314, Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1, dtd 9/18/95
- Y50-01-B2-013 "Mop Water & Mop Head Disposal", dtd 2/19/96
- Y50-01-B2-025 "Walk-In Ventilation Hood Operation", dtd 1/12/96
- Y50-01-B2-027 "Portable Fissile Vacuum Cleaner Operation", dtd 1/18/96
- Y70-66-CS-330 "Nuclear Criticality Safety Department External Monitoring Program" dtd 11/22/95
- Y50-53-SO-031 "Surveillance of Criticality Accident Alarm System for Building 9204-2E, dtd 2/09/96
- Y70-01-004 ""Annual Surveillance of Fissile Material Activities" dtd 4/27/95
- ANSI/ANS-8.3-1986, "Criticality Accident Alarm System"
- ORO, "Fire Prevention and Protection Policies", 1989
- ORO Memorandum Spence to Gustafson "Interpretation Guidance for Operational Safety Requirement OSR Y-TS-1314", dtd 9/21/95
- USQD screening records
- Internal Memo, Radle to Wasilko, "Annual Operational Safety Requirements Review", dtd 5/25/95

Interviews Conducted:

- System Manager, Protective Services (Fire System)
- D/A Operations Manager
- D/A Shift Technical Advisor
- D/A Supervisor of Assembly Operators
- D/A Assembly Person
- CAAS Systems Expert, PSS
- Control Center Assistant, PSS
- D/A Lead Engineer
- Fire Protection Inspector (2)
- Fire Officer
- Fire Chief
- Quality Engineer, Materials & Evaluation Department
- D/A Radiography Supervisor
- Maintenance Supervisor (electrical), Facility Maintenance Organization
- Maintenance Shift Supervisor, Power Distribution
- Fire Protection Engineer

Shift Performance Evolution:

- Facility Tour
- Walkdown of CSAs B2E-14 and B2E-17
- CAAS Quarterly Alarm System Coverage Test
- Fire Sprinkler System Monthly Valve Position and Supply Pressure Test
- Fire System Verification

Discussion of Results:

Record Review: The D/A safety basis documentation was reviewed to determine the required safety envelope and to assess the adequacy of the D/A OSRs. The D/A safety basis documentation consists of a variety of safety analysis documents, hazards screenings, and safety studies. The existing SARs were developed on a functional level; they address specific programs at the Y-12 Site. The SARs were not developed at a facility level to address all activities performed in each of the D/A facilities. The safety basis documentation is supplemented by a rigorous Criticality Safety Approval (CSA) program. CSAs are documents initiated by D/A Operations to request approval from the Nuclear Criticality Safety Department (NCSD) to perform administrative and physical changes within the D/A facility. The OSRs for D/A contain the LCOs and surveillance requirements for the two D/A safety systems, the criticality accident alarm system (CAAS) and the sprinkler system. The OSRs also describe administrative controls and require the use of CSAs.

The OSR administrative controls require an Unreviewed Safety Question Determination (USQD) Program. All CSAs reviewed included adequate documentation of the USQD screening process. One of the safety basis documents concerning storage resulted from a positive USQD screening. The storage document was approved by DOE. The D/A USQD program is adequate. However, the USQD process relies mainly on CSAs and a well qualified engineering staff rather than on an Order compliant SAR. The lack of Order compliant SAR data could make future USQD screening process decisions difficult, especially for new staff who lack the benefit of involvement in all past engineering decisions.

The OSRs also require a Nuclear Criticality Safety Program to ensure comprehensive review of Fissile Material Activities and ensure nuclear criticality safety. An OSR surveillance requirement requires an annual verification of compliance with all CSAs. The Facility Operations group performs a self-assessment of all active CSAs on an annual basis. The program is formally documented. Records of the program indicate the program is current and discrepancies are documented and tracked to closure. The NCSD has implemented an external monitoring program which verifies CSA compliance through the performance of CSA walkdowns which consist of Criticality Engineers performing audits of CSAs in conjunction with D/A Operations personnel. The Plant Criticality Safety Committee conducts an annual review of the Nuclear Criticality Safety Program as required by the OSRs.

Record review indicated D/A Operations personnel annually verify that the OSRs remain current as required by the OSR Administrative Controls.

A review of the safety basis documentation describing the CAAS revealed a discrepancy. The configuration of the CAAS in the D/A facilities and the surveillance testing requirements used to confirm operability of the

system do not match the System Analysis Document referenced as the system's technical basis in the Operational Safety Requirements (SE1-1). This is due to modification of the CAAS without updating the System Analysis Document. The CAAS surveillances required by the current OSRs are adequate to demonstrate continuous operability of the system.

The OSRs address other safety limits by requiring the use of Criticality Safety Approvals (CSAs). The CSAs are used as source or reference documents in the generation of D/A operating procedures. All D/A CSAs were reviewed. The operating limits established in the CSAs were consistent with the OSRs and the safety basis documentation. The designated equipment and systems are present as described in the Operational Safety Requirements and the CSAs with one exception. The alarm signal for the CAAS in the 9204-2E Material Access Area does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the OSRs. An air handling unit in 9204-2E that is entered twice a shift has a noise level which makes the CAAS inaudible and there are no CAAS visual signals in the unit. Following identification of this deficiency, a letter was issued by the Y-12 DOE Site Office on September 21, 1995 to provide temporary guidance for entry into the air handler until engineering evaluations could be performed to determine the adequate corrective action for this condition. No corrective action has been identified and evaluated. The approved compensatory measure which relies on continuous visual monitoring of a portable radiation detector while personnel are in the air handler is unsatisfactory for use on a continuous basis (SE1-2).

Three D/A procedures were reviewed to check compliance with all applicable CSAs. The procedures reflected all active CSA requirements.

Interviews: Operations, management and maintenance personnel were interviewed as well as members of the NCSD, Plant Criticality Safety Committee, Fire Department and the Plant Shift Superintendent organization. Interview topics included D/A safety systems, USQD process, CSA compliance, procedure compliance, work control, lock out/tag out, and work practices. All personnel interviewed were knowledgeable of the nuclear hazards associated with the facility. All D/A personnel demonstrated adequate knowledge of the facility's safety systems, CSAs, and the use of procedures. All personnel included, without prompting, the USQD process in their discussions of administrative and physical changes to the facility. The individuals' level of knowledge of the USQD process was commensurate with their duties.

Shift Performance Evolution: A walkdown of two CSAs was observed. During the walkdown, the NCSD Criticality Engineer performing the check and the Facility Support Manager demonstrated adequate knowledge of the facility and the safety requirements prescribed by the CSAs. No discrepancies were noted.

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The CAAS Quarterly Alarm System Coverage test was observed. The test results indicated the failure of several speakers. Although several speakers did not operate, the required sound coverage was verified.

Fire Sprinkler System Monthly Valve Position and Supply Pressure tests were observed with no deficiencies. A fire system verification was observed. This involved a walkdown of the fire system using approved engineering drawings. The drawings reflected the actual condition of the system.

Operational Safety Requirements can be technically accomplished. Compliance with the applicable Operational Safety Requirements are verified through surveillances of the safety systems and annual walkdowns of all active CSAs.

Conclusion:

The criteria of this objective have not been met.

Issue(s):

- The configuration of the Criticality Accident Alarm System (CAAS) in the D/A facilities and the surveillance testing requirements used to confirm operability of the system do not match the System Analysis Document referenced as the system's technical basis in the Operational Safety Requirements (OSRs). (SE1-1)

- The alarm signal for the Criticality Accident Alarm System (CAAS) in the 9204-2E Material Access Area does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the Operational Safety Requirements (OSRs). (SE1-2)

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA DEFICIENCY FORM 2
Safety Envelope

Functional Area: SE	Objective No.: 1	Finding: X Observ.	Pre-Start Post-Start X	Issue No.: SE1-1 Rev. No.: 1 Date: 3/4/96

ISSUE: The configuration of the Criticality Accident Alarm System (CAAS) in the D/A facilities and the surveillance testing requirements used to confirm operability of the system do not match the System Analysis Document referenced as the system's technical basis in the Operational Safety Requirements (OSRs).

REQUIREMENT: The designated equipment and systems are presented as described in the Operational Safety Requirements.

REFERENCE(S):
DOE Order 5480.22B, para 9.3, Technical Safety Requirements, 2/28/94

DISCUSSION: During the past several years, the CAAS in 9204/9204-2E has been modified to improve the operability and reliability of the system. These modifications have primarily been associated with providing an uninterruptable power supply to the instrumentation and integrating the Emergency Notification System with the CAAS. Additionally, the alarm setpoint of the system has been lowered to increase the range of coverage for each detector station. These improvements are not reflected in the System Safety Analysis Document used as the basis for the Operational Safety Requirements (OSRs). This document also specifies the OSR surveillance requirements, based on analyzed reliability data for the system. However, some of the surveillance requirements in the manual, including testing of a response to a loss of power and speaker decibel output, are no longer required by the OSRs, apparently due to the system modifications.

CONCLUSION: The configuration and surveillance testing of the CAAS in D/A facilities do not match the System Analysis Document referenced as the system's technical basis in the OSRs.

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA DEFICIENCY FORM 2
Safety Envelope

Functional Area: SE	Objective No.: 1	Finding X Observ.	Pre-Start X Post-Start	Issue No.: SE1-2 Rev. No.: 1 Date: 3/4/96

ISSUE: The alarm signal for the Criticality Accident Alarm System (CAAS) in the 9204-2E Material Access Area (MAA) does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the Operational Safety Requirements (OSRs).

REQUIREMENT: A Criticality Accident Alarm System shall be provided for the Material Access Area in 9204-2E

REFERENCE(S): Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area, Y/TS-1314, LCO 3.1.2

DISCUSSION: As required by the 9204-2E OSRs, the CAAS must be fully operable in 9204-2E to provide an alarm signal for immediate evaluation purposes. The alarm signal can either be audible or visual and must cover all areas within system's zone of coverage.

During a surveillance of the CAAS in September 1995, it was noted that there is no audible or visual alarm in the large air handling unit located on the third floor of 9204-2E. This air handling unit is within the zone of coverage for the 9204-2E MAA CAAS. Due to the high noise level inside the unit while the fans are running, other CAAS alarms on the third floor of 9204-2E can not be heard. The unit must be entered twice per shift for equipment checks and adjustments.

Following identification of this deficiency, a letter was issued by the Y-12 DOE Site Office on September 21, 1995 to provide temporary guidance for entry into the air handler until engineering evaluations could be performed to determine the adequate corrective action for this condition. However, no corrective action has been identified. Additionally, the temporary guidance for entry is inadequate as a long term action due to the reliance on an operator continuously monitoring a portable radiation instrument as the sole means of detecting a criticality.

An adequate corrective action for the lack of CAAS alarm coverage in the 9204-2E air handling unit has not been determined. The 9204-2E OSRs do not provide clear guidance to allow routine entry to areas with no CAAS alarm. Condition C of LCO 3.1.2 requires immediate evacuation of areas with inoperable alarm signal coverage and restoration of alarm signal capability within 24 hours.

CONCLUSION: The 9204-2E MAA CAAS does not provide alarm coverage in the 9204-2E air handling unit, which is frequently entered during routine facility operations. Inadequate resolution of this condition has resulted

in no alarm coverage for several months. However, the 9204-2E OSRs do not allow routine entry to areas with inadequate alarm coverage. This is a pre-start finding due to the inadequate alarm coverage in the routinely entered air handling unit.

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

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FUNCTIONAL AREA: SE	OBJECTIVE 2, REV. __ DATE: March 4, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, including safety-related process systems and safety-related utility systems. **(CORE REQUIREMENT #5)**

Criteria

Confirmation of continued compliance with safety requirements, including clearly defined surveillance intervals and periodic self-assessments, is required by procedures. The facility is in compliance with these requirements. (5480.22, para 9, 10, Attachment I, Background, 5480.23, para 8, Attachment I, Section 4)

Note: The scope of the Readiness Assessment does not include an assessment of the maintenance Recall-A and calibration programs and procedures themselves, but will verify entry of applicable systems in the appropriate Recall/calibration program.

Approach

Record Review: Review completed periodic condition and operability reconfirmations and verify they have been performed according to the schedule and requirements of the Operational Safety Requirements and/or Criticality Safety Approvals. Through review of these records, verify the status of the safety systems and safety-related process system components in the maintenance Recall-A program and other inspection and calibrations programs are maintained and operational impacts of status changes are understood.

Interviews: Interview personnel associated with the program for periodic condition and operability reconfirmations. Also, interview personnel who manage the safety systems and safety-related process system components in the maintenance Recall-A program, other inspection, and calibration programs to determine how well they understand and use these programs.

Shift Performance: Walk down one or more safety-related systems to assess operability and condition. Ensure that the status is consistent with the condition specified in the building's vital safety system status board (or other method of status control). Observe the conduct of a periodic condition and operability reconfirmation.

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Records Reviewed:

- Y/TS-1314, Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area, Rev. 1, 9/18/95
- Y50-53-SO-031, Surveillance of Criticality Accident Alarm System for 9204-2E, 2/9/96
- Y50-51-FO-003, Monthly and Quarterly Fire Protection Surveillances-Wet Pipe Sprinkler Systems 4, 5, 8, and 11 in Building 9204-2, 2/19/96
- Y50-50-304, Monthly/Quarterly Building Inspections, 2/14/93
- Y50-51-FO-005, Monthly, Quarterly, and Annual Fire Protection Surveillances-Fire cycle Sprinkler System 6 in Building 9204-2, 2/19/96
- Y50-51-FO-006, Monthly, Quarterly, and Annual Fire Protection Surveillances-Fire cycle Sprinkler Systems 1 and 4 in Building 9204-2E
- Y/TS-1407, Interim System Description Document for the Y-12 Plant Criticality Accident Alarm System, Rev. 0, 9/21/95
- Y/ENG/SAD-021, System Analysis Document, Criticality Accident Alarm System, June 1994
- Completed Annual Preventive Maintenance Forms for GA-6 NMC Monitors, Appendix A of Y50-35-77-024 for 8/5/95, 8/4/95, 8/18/95
- Completed Radiation Detector Annual Preventive Maintenance Checklists, Appendix A of Y50-35-MD-3100 for 11/13/95, 11/9/95, 12/4/95, 12/6/95, 11/22/95, 11/17/95
- Completed Calibration Records for Fire Protection System Supply/Pressure Gauges, 8/11/95, 8/9/95
- Completed Records for Monthly, Quarterly and Annual Surveillances of Fire Protection Systems in 9204-2 and 9204-2E
- Completed Records for Monthly and Quarterly Surveillances of Criticality Accident Alarm Systems in 9204-2 and 9204-2E
- Criticality Accident Alarm System Surveillance/Test Schedule, January 5, 1996
- Daily Report for 9204-2E, Surveillance Status, February 19, 1996

Interviews Conducted:

- Site Operations Center Department Head
- Two Plant Shift Superintendents
- D/A Operations Manager
- Two D/A Shift Technical Advisors
- Fire Chief

Shift Performance Evolution:

- Quarterly CAAS surveillance
- Monthly fire protection system surveillance

Discussion of Results:

Record Review: A documented program is in place in the D/A facilities to periodically confirm the condition and operability of safety significant systems as required by the Operational Safety Requirements (OSRs). There are no overdue OSR surveillances. The surveillances on the Criticality Accident Alarm System (CAAS) and Fire Protection System are performed by personnel from the D/A Organization, Plant Shift Superintendent's Office, Facility Maintenance Organization, and Fire Department. Additional support organizations are used for specific aspects of the testing. The Operations Manager for D/A approves the performance of each surveillance.

A surveillance tracking system is maintained in the D/A facilities. This system consists of a list of the surveillance requirements for the D/A facilities, the dates the surveillance were last performed, and the dates the surveillances are due next. These lists were reviewed and signed by the Operations Manager or Shift Manager daily. All of the required surveillance requirements were included on the list and all scheduled due dates were appropriate.

Several completed surveillance procedures and checklists for the fire protection system and CAAS were reviewed to determine if the completion dates matched the dates on the surveillance tracking list. No discrepancies were noted. All surveillances were conducted within the required periodicity. The completed fire protection system surveillances were reviewed for accuracy by the Y-12 Fire Chief and the D/A Operations Manager, and the CAAS surveillances were reviewed by the test coordinator from the Plant Shift Superintendent's office and the D/A Operations Manager.

The Plant Shift Superintendent's Office and the Fire Department also maintain their own tracking systems for the equipment on which they perform OSR surveillances. Both systems are used to schedule when the next surveillances should be performed so they can be placed on each building's plan of the day. A review of the CAAS and fire protection systems indicated that the OSR surveillances schedules tracked by these organizations matched the information in the D/A tracking systems. However, one non-OSR preventive maintenance item, a fire protection system heat detector operational test, was not included in the Fire Department's scheduling system. A check of maintenance records indicated that all detectors had been tested within the past year, and fire department personnel were aware of the need to test the detectors.

The system status board in 9204-2E was reviewed. It accurately reflected the status of the CAAS and fire protection systems.

Interviews: Interviews with two Plant Shift Superintendents, the D/A Operations Manager, two D/A Shift Technical Advisors, and surveillance testing personnel indicated that each had a satisfactory knowledge of

their responsibilities for ensuring that surveillance testing is performed within the required periodicity and using approved procedures.

Shift Performance: Monthly fire protection and quarterly criticality accident alarm system surveillances were observed. The results of observations are described in SE-4.

Conclusion:

The criteria for this objective have been met.

Issue(s):

None

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA ASSESSMENT FORM 1
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FUNCTIONAL AREA: SE	OBJECTIVE 3, REV. __ DATE: March 4, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: Safety system and other instruments which monitor Technical Safety Requirements are monitored for calibration. **(CORE REQUIREMENT #5).**

Criteria

Calibration has been properly performed at the required frequency for all safety systems. The calibration status of the safety systems and safety-related process systems components meets operational requirements. (Note that the Oak Ridge Y-12 Site has Operational Safety Requirements instead of Technical Safety Requirements.) (5480.22, para 9, 10).

Approach

Record Review: Review the calibration tracking system to assess the mechanism used for scheduling, performing, reporting results and dispositioning deficiencies. Review the safety systems and safety-related process system components to determine if each safety system has an adequate calibration process. Verify that the current status supports the Oak Ridge Y-12 Site Operational Safety Requirements.

Interviews: Interview personnel associated with the calibration program to assess their understanding of program requirements and responsibilities.

Shift Performance: Observe performance of the safety system calibration process to assess operability and condition, and that the status is consistent with the condition specified for safety system operation.

Records Reviewed:

- Y/TS-1314, Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area
- Y50-53-SO-032, Surveillance of Criticality Accident Alarm System for Building 9204-2
- Y50-53-SO-031, Surveillance of Criticality Accident Alarm System for Building 9204-2E
- NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, 1992
- Gage Calibration Work Packages for Fire Protection System Pressure Gages in 9204-2E and 9204-2
- Monthly, Quarterly, and Annual Fire Protection Surveillance Records

- Monthly and Quarterly CAAS Surveillance Records
- CAAS Detector Annual Preventive Maintenance Data Packages for 9204-2 and 9204-2E
- Daily Report for 9204-2E, February 26, 1996
- CAAS Testing Schedule, January 5, 1996

Interviews Conducted:

- Fire Protection Maintenance Coordinator
- Fire Protection Engineer
- Fire Chief
- CAAS System Engineer
- Maintenance Supervisor (CAAS)

Shift Performance Evolution:

Walkdown of Fire Protection and Criticality Accident Alarm Systems

Discussion of Results:

Record Review: The review of the Operational Safety Requirements (OSRs), calibration work packages, and the CAAS and fire protection system surveillance records indicates that the safety systems and instruments that monitor OSRs are properly monitored for calibration.

The Fire Department demonstrated a satisfactory program for scheduling and implementing their calibration program. A review of the calibration program for the fire protection system indicates that the gauges used to monitor the water supply pressure for each fire suppression system are calibrated on a periodic basis. These gauges are used to verify system pressure during the monthly fire protection system surveillance required by the OSRs. The calibration records indicated satisfactory results for all gauges monitored.

The operability of the heat detectors used to activate the fire cycle sprinkler systems was verified to have been confirmed using a heat lamp within the past year. Operability of the fire cycle systems requires proper operation of these heat detectors. The detectors sense the high temperature of a fire and open an isolation valve, initiating water flow to the sprinklers. Additionally, the annual full-flow system trip test fully activates the heat detector electrical circuitry and initiates water flow through the fire cycle system.

A review of the calibration program for the CAAS indicates that the monthly and quarterly surveillances performed on the system, along with the annual maintenance on the CAAS detectors, verify the operability and calibration of the system. The monthly and quarterly surveillances use a test source to verify the response of the system to radiation. Annually, each detector is removed from the system and tested using a detailed

maintenance procedure. The annual maintenance verifies proper operation of the detector and includes a three point alignment to ensure proper response to radiation. The detector's alarm trip point is adjusted to 30 mR/hr. A calibrated radiation test source is used to perform the alignment. The alignment checklist includes a verification of the detector's condition and response prior to any adjustments or repairs. These checks provide evidence of the detector's as found condition in the facility. However, there are no clear pass/fail criteria for these checks. There is also no feedback mechanism to identify detector performance trends based on the annual maintenance. A failure of these checks would indicate that more frequent maintenance is necessary to ensure operability. Incorporation of these items would provide additional data to demonstrate the reliability of the CAAS. (SE3-1) The surveillance and annual maintenance records indicated that there is a satisfactory method for scheduling and tracking required testing.

Interviews: Interviews with maintenance and calibration personnel indicated that personnel are aware of their responsibilities relative to the calibration of safety systems and instrumentation which monitor Operational Safety Requirements.

Shift Performance: The calibration status of the fire protection and CAAS were observed during walkdowns of these systems in D/A facilities. The instrumentation was found to be labeled as calibrated and their identification markings matched the administrative calibration records.

Conclusion:

The criteria for this objective have been met.

Issue(s):

- The CAAS annual surveillance procedure does not include pass/fail criteria for the as found condition of the detector. (SE3-1)

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

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Functional. Area: SE	Objective No.: 3	Finding Observ. X	Pre-Start Post-Start	Issue No.: SE3-1 Rev. No.: 0 Date: 3/4/96

ISSUE: The CAAS annual surveillance procedure does not include pass/fail criteria for the as found condition of the detector.

REQUIREMENT: All test and corrective actions shall be recorded in a logbook maintained for each system. This record will provide information on the system operability and help to identify sources of failure.

REFERENCE(S): ANSI/ANS Standard 8.3, American National Standard Criticality Accident Alarm System, Section 6.7

DISCUSSION: Annually, each CAAS detector is removed from the system and tested using a detailed maintenance procedure. The annual maintenance verifies proper operation of the detector and includes a three point alignment to ensure proper response to radiation. The alignment checklist includes a verification of the detector's condition and response prior to any adjustments or repairs. These checks provide evidence of the detector's as found condition in the facility. However, there are no clear pass/fail criteria for these checks. There is also no feedback mechanism to identify detector performance trends based on the annual maintenance. A review of recently completed annual maintenance records indicated that in all cases but one, the sensitivity of the detector dropped since the last routine alignment. Although all the detectors remained sensitive enough to detect the minimum accident of concern, the lack of a pass/fail verification could fail to identify an unacceptable condition in the future. A failure of these checks could indicate the need for more frequent maintenance or other actions. Incorporation of these items would provide additional data to demonstrate the reliability of the CAAS.

CONCLUSION: The annual maintenance on the CAAS detectors does not provide a clear pass/fail criteria to evaluate the as found condition of the detectors. There is no feedback mechanism to identify detector performance trends based on the annual maintenance.

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

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FUNCTIONAL AREA: SE	OBJECTIVE 4, REV. __ DATE: March 4, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: All safety and safety-related utility systems are currently operational and in a satisfactory condition. **(CORE REQUIREMENT #5)**

Criteria

The operational status and condition has been determined by satisfactory evaluation of the calibration and surveillance status for the safety systems. (5480.22, para 9, and 10)

Approach

Record Review: Review the safety systems tracking program to assess the mechanism used for monitoring, testing, reporting testing results and dispositioning deficiencies. Review the safety systems to decide if safety system operations are within the limits defined by the Operational Safety Requirements and Criticality Safety Approvals. Review outstanding safety system and safety-related process system deficiencies identified through the corrective maintenance program, preventive maintenance program, test program, or other reporting processes to assess the condition of facility systems to support safe operations.

Interviews: Interview personnel associated with the safety system operation to assess their understanding of program requirements and responsibilities. Interview operations and management personnel to determine if the safety system's status is effective for safe operations.

Shift Performance: Walk down and observe the performance of safety systems to assess operability and condition, and if the status is consistent with the condition specified for safe operation.

Records Reviewed:

- Y/TS-1314, Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area, 9/18/95
- Y50-53-SO-031, Surveillance of Criticality Accident Alarm System for Building 9204-2E, 2/26/95
- Y50-53-SO-032, Surveillance of Criticality Accident Alarm System for Building 9204-2, 2/9/96
- Y50-51-FO-004, Monthly and Quarterly Fire Protection Surveillances-Wet Pipe Sprinkler System 2 in Building 9204-2E, 2/19/96
- Y50-51-FO-005, Monthly, Quarterly, and Annual Fire Protection

Surveillances-Fire cycle Sprinkler Systems 1 and 4 Building 9204-2E, 2/19/96

- Y50-51-FO-005, Monthly, Quarterly, and Annual Fire Protection Surveillances-Fire cycle Sprinkler System 6 in Building 9204-2, 2/19/96
- Y50-51-FO-003, Monthly and Quarterly Fire Protection Surveillances-Wet Pipe Sprinkler Systems 4, 5, 8, 11, 2/19/96
- Surveillance Instructions Operator Aid for Quarterly Test of the CAAS Using the Clarion Horn, no date
- Criticality Accident Alarm Testing Schedule, January 5, 1996
- Y50-35-MD-3100, GA-6 Radiation Detectors Annual Preventive Maintenance, 8/12/95
- Daily Report for 9204-2E, February 26, 1995

Interviews Conducted:

- Fire Department Chief
- D/A Operations Manager
- Two Shift Technical Advisors
- Fire System Engineer
- Fire Protection System Expert
- CAAS System Expert
- CAAS Maintenance Supervisor

Shift Performance Evolution:

- Walkdown of CAAS in 9204-2E
- Walkdown of fire protection system in 9204-2E
- Monthly surveillance of fire protection system in 9204-2E
- Quarterly surveillance of CAAS in 9204-2E

Discussion of Results:

Record Review: The records demonstrating operability of the safety significant systems for Disassembly and Assembly (D/A) facilities were reviewed. These include the Criticality Accident Alarm System (CAAS) and the Fire Protection Systems. Surveillance records were reviewed and indicated that both systems are operational.

The CAAS records indicated that the operability of the system is tracked by D/A operations personnel and the Plant Shift Superintendent (PSS). The CAAS is continuously monitored at the Site Operations Center. Maintenance on the systems is conducted by the Facility Maintenance Organization (FMO). Records of monthly and quarterly surveillances required by the Operational Safety Requirements (OSRs) indicated satisfactory performance of the periodic tests. The annual calibration records of each CAAS detector provided evidence that the system is adequately aligned to respond to criticality accidents.

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The surveillance records for the fire protection system indicated that the system is fully operable. The satisfactory performance of monthly, quarterly, and annual testing of the wet pipe and pre-action systems demonstrated operability.

Interviews: FMO and Fire Department personnel responsible for the performance of maintenance on the safety significant systems were interviewed. They understood the importance of the systems and demonstrated satisfactory knowledge of maintenance and testing requirements. They were knowledgeable of the operability requirements described in the Limiting Conditions for Operation (LCO) for each system.

The D/A Operations Manager and two Shift Technical Advisors were interviewed. These individuals understood the importance of the safety significant systems and had a detailed knowledge of the LCO requirements. They were thoroughly familiar with the operation of the CAAS and fire protection systems in the D/A facilities. They described satisfactory controls for activities that could potentially impact the operability of the systems.

Shift Performance: The performance of a monthly surveillance on the fire protection system was observed. A Pre-job brief was conducted for the evolution and all personnel involved in the activity attended. The surveillance was conducted properly and with satisfactory results. Although the surveillance was performed correctly, minor procedural compliance deficiencies were noted.

The performance of a quarterly surveillance on the CAAS was observed. A thorough pre-job brief was conducted with all personnel. The surveillance was conducted properly and with satisfactory results. However, minor deficiencies were noted in procedural compliance when maintenance personnel activated the CAAS alarm at the detectors. Also, one operator was observed not continuously monitoring the hand held radiation instrument required by the procedure. Although the CAAS alarm signal was fully audible in all areas, some alarm horns were found to be inoperable by the D/A personnel. The D/A personnel demonstrated a satisfactory method for tracking these discrepancies and planning corrective actions.

Portions of the CAAS and fire protection system in 9204-2E were walked down to assess the operability of the system and to ensure the status was consistent with the LCO requirements. For the fire protection system, recently prepared engineering drawings were used as a reference during the walkdown and compared to the as found conditions. The walkdown indicated the system was fully operable and satisfied the requirements of the LCO. However, some valves on the inlet manifold to 9204-2E were found to lack identification. The configuration of portions of the CAAS were also walked down. In all cases the system was operable and consistent with the LCO requirements.

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Conclusion: The criteria for this objective have been met.

Issue(s):

none

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA ASSESSMENT FORM 1
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FUNCTIONAL AREA: SE	OBJECTIVE 5, REV. 1 DATE: March 4, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: A baseline compliance status review of Department of Energy Orders 5480.22 and 5480.23 has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All noncompliance issues are adequately addressed by Department of Energy approved Compliance Schedule Agreement or exemptions. The Compliance Schedule Agreements include an adequate technical basis and schedule for attaining compliance. (Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review order compliance packages for the listed orders, including all applicable Compliance Schedule Agreements and Request for Approvals, exemptions, and compensatory measures. For identified Requests for Approvals, verify schedule commitments have been met and compensatory measures identified.

Interviews: If these orders are not fully implemented, interview management personnel to ensure they are aware of the noncompliance(s) and actions necessary to fully carry out the order requirements along with any interim compensatory measures. This includes both the site-level programmatic and facility-level compliance and adherence-based assessments.

Shift Performance: Where appropriate, observe the implementation of any specified compensatory measures within the facility to determine their effectiveness.

Records Reviewed:

- Order Compliance Package for DOE Order 5480.22, "Technical Safety Requirements"
- Order Compliance Package for DOE Order 5480.23, "Nuclear Safety Analysis Reports"
- MMES/Y-12-DOE5480.22-CSA-80C, Request for Approval, 8/24/95
- LMES/Y-12-DOE-5480.23-CSA-95A, Request for Approval, 1/5/96
- MMES/Y-12-DOE-5480.23-CSA-132, Request for Approval, 5/15/95

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Interviews Conducted:

- Facility Safety Manager
- Two Systems Engineers
- Facility Safety Engineer

Shift Performance:

- None

Discussion of Results:

Record Review: The baseline compliance status of DOE Orders 5480.22 and 5480.23 were reviewed. Order Compliance packages indicate that D/A facilities are not in compliance with these DOE Orders. Although the D/A facilities do have Operational Safety Requirements (OSRs) that place appropriate limits and controls on activates, the D/A facilities do not have approved Safety Analysis Reports (SARs) or Technical Safety Requirements (TSRs) that fully comply with DOE Orders 5480.22 and 5480.23. The OSRs are based upon a variety of older safety analysis documents, hazards screenings, safety studies, and engineering judgement. The existing SARs were developed on a functional level, and address specific programs at the Y-12 Site. The SARs were not developed at a facility level to address all activities performed in each of the D/A facilities. A Safety Analysis Report Upgrade Program was implemented to improve the technical content of the SARs and develop TSRs. The schedule for completion of SARUP has changed several times due to programmatic changes at Y-12, resulting in delays in completing SARs and TSRs. A revised implementation plan for SARUP has recently been submitted to DOE for approval. Requests for Approval (RFA) related to the noncompliances with these DOE Orders have been developed and approved.

RFA MMES/Y-12-DOE-5480.22-CSA-80C requests approval for the noncompliance with the Technical Safety Requirements (TSRs). Since nuclear activities at the Y-12 Plant were placed in stand down in September 1994, the RFA commits to developing Operational Safety Requirements (OSRs) for facilities that perform Category 2 fissile operations prior to restart. However, the RFA does not clearly address how the D/A facilities will develop TSRs that are fully compliant with the requirements of DOE Order 5480.22. The completion of the corrective actions in the current RFA will not result in approved TSRs. (SE5-1)

Lockheed Martin Energy Systems, Inc. (LMES) has prepared Request for Approval (RFA) LMES/Y-12-DOE-5480.23-CSA-95A to address the noncompliance with DOE 5480.23. This RFA provides a schedule for completion of the Safety Analysis Upgrade Program (SARUP). Additionally, it commits to preparation of Basis of Interim Operation (BIO) documents for the D/A facilities which will be used as the safety bases while final SARs are being developed. These BIOs contain qualitative safety analyses for the

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D/A facilities and have been submitted to DOE for approval.

Interviews: Interviews with the Manager of Facility Safety and facility safety engineers indicated that they are aware of the noncompliances in SARs and TSRs.

Shift Performance: There are no operational compensatory measures associated with the noncompliances with DOE Orders 5480.22 and 5480.23. Activities are conducted following the approved OSRs and safety basis documents.

Conclusion: The Safety Analysis Upgrade Program at Y-12 has been implemented to address the noncompliances with DOE Orders 5480.22 and 5480.23. However, the RFA for DOE Order 5480.22 does not provide actions or a schedule to resolve the order noncompliances. The criteria for this objective have been met.

Issue(s):

- The D/A facilities do not have Technical Safety Requirements (TSRs) that are fully compliant with DOE Order 5480.22. The Request for Approval that addresses this noncompliance does not clearly specify the actions and schedule to develop TSRs. (SE5-1)

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA DEFICIENCY FORM 2
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Functional Area: SE	Objective No.: 5	Finding X Observ.	Pre-Start Post-Start X	Issue No.: SE5-1 Rev. No.: 2 Date: 3/4/96

ISSUE: The D/A facilities do not have Technical Safety Requirements (TSRs) that are fully compliant with DOE Order 5480.22. The Request for Approval that addresses this noncompliance does not clearly specify the actions and schedule to develop TSRs.

REQUIREMENT: All noncompliance issues are adequately addressed by Department of Energy approved Request for Approvals or exemptions. The Requests for Approval include an adequate technical basis and schedule for attaining compliance.

REFERENCE(S): Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction.

DISCUSSION: The D/A facilities have Operational Safety Requirements (OSRs) that appropriately specify the Limiting Conditions for Operation (LCOs) and administrative programs necessary to safely control the D/A activities. However, the D/A facilities do not have approved TSRs or Safety Analysis Reports (SARs) which fully comply with DOE Orders 5480.22 and 5480.23. The Y-12 Plant implemented the Safety Analysis Report Upgrade Program (SARUP) to improve the content of the SARs and develop TSRs. The SARUP schedule has been changed several times, resulting in SAR and TSR development delays. A revised implementation plan for SARUP was recently submitted to DOE for approval. Requests for Approval (RFA) have been issued and approved that address these order noncompliances. However, the RFA for DOE Order 5480.22 does not clearly provide actions or a schedule for developing TSRs to meet the order requirements.

CONCLUSION: The D/A Facilities do not have approved TSRs that comply with DOE Order 5480.22. The approved Request for Approval does not provide a clear plan or schedule for development of TSRs. SARUP has been implemented to prepare TSRs at Y-12, but the schedule has been delayed. Since the D/A facilities currently have adequate OSRs, this is a post start issue.

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 1, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES__	NO X

OBJECTIVE: Training and qualification programs for Disassembly/Assembly operations, quality, and technical support personnel have been established, documented, and implemented to cover the range of duties required to be performed. **(CORE REQUIREMENT #2)**

Criteria

Procedures are developed and implemented that describe the qualification process, including examination requirements for qualification and/or certification of disassembly/assembly operations, quality, and technical support personnel. Procedures describing requalification, maintenance of proficiency, granting of exceptions and extensions, alternatives to educational requirements, remediation and evaluations by facility and training management are developed and implemented. (5480.20A, Ch. I, para 7)

Goals, objectives, and plans are in place to describe the implementation of the training and qualification programs.

Training programs incorporate formal on-the-job and hands-on evaluation of skills.

The qualification program includes requirements for successful completion of written, oral, and operational evaluations for operations and maintenance personnel.

Procedures are in place to ensure that non-resident personnel will receive the proper training for unescorted access to disassembly/assembly facilities and are current in their training requirements.

Approach

Record Review: Review training and qualification records for disassembly/assembly operations, quality, and technical support personnel, including results of written, oral and operational evaluations, to ensure the training program is being formally administered and controlled.

Review training records to ensure they are maintained in an auditable manner and support management information needs by providing required data on each individual's training participation, performance, and qualification/certification.

RA ASSESSMENT FORM 1
Training

Review trainee feedback forms, training evaluations of lessons learned from operating experiences, and formal training program reviews to verify feedback is addressed in a formal manner. Review the evaluation/self assessment program for involvement by facility and training management in program, instructor (classroom and on-the-job), and training materials assessment.

Review the continuing and remedial training program for adequacy.

Review the written goals and objectives related to the implementation of the training and qualification process and ensure they are documented in strategic plans, mission statement and that the goals and objectives adequately address the current issues that are important to both Department of Energy and contractor management.

Interviews: Interview training personnel to decide if they have sufficient experience and qualifications for assessing disassembly/assembly operations, quality, and technical support personnel.

Shift Performance: Attend oral or operational evaluations of operator, supervisor, or operations support personnel. Verify that personnel demonstrate knowledge of activities and requirements that were included in their training program. Evaluate an initial or continuing training classroom presentation or field training activity for technical and administrative adequacy. Evaluate the degree to which on-the-job training is used to reinforce classroom activities.

Records Reviewed:

- Organizational Charts for:
  - Center for Continuing Education (CCE)
  - LMES Disassembly and Storage Organization (DSO)
  - LMES Quality Organization (QO)
- Y/GA-66/R5, Y-12 Plant Training Implementation Matrix (TIM), Revision 5 for DOE Order 5480.20A, dated November 1995
- LMES Programmatic Assessment for DOE 5480.20A
- LMES Adherence Based Assessment for DOE 5480.20A
- Request for Approval, Request No.: LMES/Y-12-DOE-5480.20-CSA-82D, dated October 25, 1995
- DOE Oak Ridge Operations Office letter: Y-12 Plant Training Implementation Matrix (TIM), Revision 5, dated January 11, 1996
- Y-12 Training Manual
- Y/AD-623, Plan for Continuing and Resuming Operations at the Y-12 Plant

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Training

- Y-12 Training Procedures Y-90 Series
  -010, Selection, Qualification, Certification, and Continuing Training
  -020, Exceptions, Extensions, Alternatives, and Waivers
  -030, Training records
  -040, Conduct of Training Analysis
  -050, Conduct of Training Design
  -060, Conduct of Training Development
  -070, Development, Control, and Administration of Examinations
  -080, Conduct of Training Implementation
  -090, Training Remediation
  -100, Conduct of Training Program Evaluation
- DSO and QO Training and Qualification Records (20)
- Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization, dated February 16, 1996
- Corrective Action Plan for DNFSB Recommendation 94-4 Task 4 Assessment of Conduct of Operations, dated January 31, 1996
- Training Management System Data Base (TMS)-26 separate personnel data entries
- Standing Order Log. No. 9204-2E-95-019
- Quality Organization Standing Order 96-01
- Summary Report: Y-12 Plant Training and Qualification Accomplishments as of December 31, 1995, dated January 30, 1996
- Y-12 Training and Qualification Program Management Self-Assessment Plan

Interviews Conducted:

- Training Manager, Disassembly and Storage Operations (DSO)
- Y-12 Quality Manager
- Quality Organization Management/Assessment and Compliance Branch Head
- Quality Organization Training Manager
- Quality Organization Training Coordinator
- Interim Y-12 Plant Training Manager
- CCE Organizational Training Coordinator
- 9204-2E Shift Manager
- Supervisor of Disassembly Operations/9204-2E
- DSO Process Engineer
- Quality Organization Training Analysts
- Quality Organization Dimensional Inspection Engineer

Shift Performance Evolution:

- Classroom Training for Assembly Station Director, Module 06502
- Classroom Training for Safeguards/Security Plans for D&S Areas, Module 13263
- Training Working Group Meeting on February 29, 1996

RA ASSESSMENT FORM 1
Training

- o Performance of simulation exercise, C-5 Unit Disassembly on February 28, 1996
- o Performance of weldring degreasing, electropolishing and electron beam welding on February 29, 1996

Discussion of Results:

Record review: Training and Qualification records for disassembly/assembly (D/A) operations, quality, and technical support personnel were reviewed. A check of 20 training and qualification records was conducted at the central repository for training records in Building 9709. These records contain the objective quality evidence of the training process and include the results of written and oral evaluations, and document the final qualification or certification of personnel. The records are well maintained and auditable. The Site's computer based training tracking system, the Training Management System (TMS), is accurate when compared to the hard copy records and is a useful tool in monitoring qualification/certification status. A few minor administrative deficiencies were noted. Each qualification record contains a cover sheet which is not completed or signed. This cover sheet is reportedly no longer required and is to be removed from the records. A review of one record for an engineering support person in the Quality Organization indicated that training was deficient or expired in five training modules. Two Quality Organization personnel lacked required job specific training as specified in the Training Developmental Administrative Guide (TDAG). Some medical certification requirements as listed in the TDAG were not included in the qualification records.

A walkdown of Building 9204-2E revealed that access procedures incorporate positive control of non-resident personnel. The access control program includes site specific and facility training requirements and only those personnel who have received this training are permitted unescorted access.

There is no formally established process to routinely conduct self-assessments of the Y-12 Plant training programs. The current satisfactory state of the D/A training program is a result of the extensive efforts to conduct assessments associated with the Disassembly and Assembly restart activities. In support of Defense Nuclear Facilities Safety Board (DNFSB), Recommendation 94-4 Implementation Plan Task 5 actions, a number of deliverables in support of a Y-12 Training and Qualification Program Management Self-Assessment Plan are scheduled for April 1996. A training evaluation as required by DOE 5480.20A in accordance with the Guidelines for Evaluation of Nuclear Facility Training Programs, DOE-STD-1070-94 has yet to be conducted.

Training programs reflect the input from lessons learned from operating experience. Continuing training programs for D/A and Quality Organizations are not mature. Plans are in place, but there is little evidence that these programs are effective. So much of the recent efforts

have been focused on preparations for resumption, that the continuing training program objectives have been relegated for future accomplishment. Personnel who will administer these programs are knowledgeable of their duties. There is little evidence that remedial training programs are in place. In the review of the qualification records, there was no indication that any of the persons had been involved in a remedial process. It is concluded from this sample that examinations and operational evaluations may not be challenging.

A review of the list of qualified positions and proficiency records for operations personnel assigned to Building 9204-2E revealed that Standing Order Log No. 9204-2E-95-019 did not specify procedures to be followed in cases where certified personnel did not meet proficiency requirements. The list of qualified personnel in use in Building 9204-2E contained one certified person whose proficiency had not been maintained as required. The Quality Organization has just established procedures to specify the list of qualified positions and proficiency requirements for activities they conduct in Building 9204-2E. Quality Organization Standing Order 96-01 addresses proficiency requirements. There is no list of qualified positions promulgated and in place for the Quality Organization. Standing Order 96-01 does not specifically state that personnel who fail to maintain proficiency shall be removed from the list of qualified positions. (TR1-1)

Goals and objectives for implementing the training and qualification process were reviewed. A strong relationship between line management and the training organizations has not been established. Management is not involved in supervising training and does not actively interface with training efforts to ensure that the training product is of the desired quality. While there are areas of excellence in administering training programs, there is no overall direction provided by line management which provides a long range perspective to efficiently integrate training programs to achieve total excellence in operations at Y-12. This shortcoming is demonstrated by the need to significantly upgrade the training programs for the Quality Organization to support this Readiness Assessment (RA). The Quality Organization Training Program did not benefit from lessons learned during the Receipt, Storage, and Shipment (RSS) RA. The current training groups which support the operations and quality organizations are not well coordinated to ensure training is efficiently conducted and that lessons learned between groups are shared. Recent stop gap measures remain a factor in the planning for Quality Organization training. A Quality Program Training Manager was placed in position a few days before the commencement of this RA. While recent positive changes in the training for this organization are evident, it appears that they were instituted in response to discrepancies noted in the preparation for this RA. Training personnel are not always aware of management direction and emphasis. The current satisfactory state of training can be attributed to the addition of temporary sub-contractor staff, the dedicated efforts of a few training group personnel, and the

additional attention associated with efforts to resume operations such as the assignment of mentors. When this attention is focused to other areas of interests and the requirements of special personnel are no longer required, the current organization may not be capable of sustaining the same level of training quality. (TRI-2)

Conclusion: Training programs for D/A operations, quality, and technical support personnel have been established, documented, and implemented to cover the range of duties required to be performed; however procedures to ensure that only certified personnel are permitted to perform duties are not in place and a strong relationship between line management and training organization has not been established. The criteria for this objective have not been met.

Issue(s):

- Procedures and practices to remove certifications from personnel who do not maintain proficiency are not established. A Qualified Personnel List is not maintained for the Quality Organization. (TRI-1)

- Management of training at Y-12 is not well coordinated and lacks effective direction and supervision from line management. (TRI-2)

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

ORR DEFICIENCY FORM 2
Training

Functional Area: TR	Objective No.: 1	Finding X Observ.	Pre-Start X Post-Start	Issue No.: TR1-1 Rev. No.: Date: 03/05/96

ISSUE: Procedures and practices to remove certifications from personnel who do not maintain proficiency are not established. A Qualified Personnel List is not maintained for the Quality Organization.

REQUIREMENT: If active status (proficiency) is not maintained, certification shall be suspended. Prior to resuming duties associated with certification, the operating contractor shall ensure that:

(1) Certification is otherwise current and valid; and

(2) The certified operator, fissionable material handler, or certified supervisor has performed certification duties under the direct supervision of a certified person, as appropriate to the position, for a specific period of time.

The Operations Manager/Production Manager shall maintain the Qualified Personnel List as specified in the Nuclear Conduct of Operations Manual.

REFERENCE(S): DOE Order 5480.20A, Chapter IV, paragraph 5; Y-12 Nuclear Operations Conduct of Operations Manual, Chapter 2.2.V.B.

DISCUSSION: A review of the list of qualified positions and proficiency records for operations personnel assigned to Building 9204-2E revealed that Standing Order Log No. 9204-2E-95-019 did not specify procedures to be followed in cases where certified personnel did not meet proficiency requirements. The list of qualified personnel in use in Building 9204-2E contained one certified person whose proficiency had not been maintained as required. The Quality Organization has just established procedures, Standing Order 96-01, which specify proficiency requirements for activities they conduct in Building 9204-2E. Standing Order 96-01 does not specifically state that personnel who fail to maintain proficiency shall be removed from the list of qualified positions.

There is no list of Quality Organization qualified positions as required by the Nuclear Conduct of Operations Manual.

CONCLUSION: Proficiency requirements are not fully enforced in Building 9204-2E. A list of qualified positions for the Quality Organization performing activities in Building 9204-2E has not been established. These requirements must be met to ensure operations are safely conducted. This issue must be resolved prior to restart.

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

ORR DEFICIENCY FORM 2
Training

Functional Area: TR	Objective No.: 1	Finding Observ. X	Pre-Start Post-Start	Issue No.: TR1-2 Rev. No.: Date: 03/05/96

ISSUE: Management of training at Y-12 is not well coordinated and lacks effective direction and supervision from line management.

REQUIREMENT: Line management has overall responsibility and authority for the content and effective conduct of the training and qualification programs.

REFERENCE(S): DOE Standard 1070-94, Objective 1, Criteria 1.1.

DISCUSSION: A strong relationship between line management and the training organizations has not been established. Management is not routinely involved in supervising training and does not actively interface with training efforts to ensure that the training product is of the desired quality. There is no overall direction provided by line management which provides a long range perspective to efficiently integrate training programs to achieve total excellence in operations at Y-12. This shortcoming is demonstrated by the need to significantly upgrade the training programs for the Quality Organization to support this Readiness Assessment. The Quality Organization Training Program did not benefit from lessons learned during the Receipt, Storage, and Shipment (RSS) Readiness Assessment. The current training groups which support the operations and quality organizations are not well coordinated to ensure training is efficiently conducted and that lessons learned between groups are shared. Training personnel are not always aware of management direction and emphasis. The current satisfactory state of training can be attributed to the addition of temporary sub-contractor staff, the dedicated efforts of a few training group personnel, and the additional attention associated with efforts to resume operations such as the assignment of mentors. When this attention is focused to other areas of interests and the requirements of special personnel are no longer required, the current organization may not be capable of sustaining the same level of training quality.

CONCLUSION: While the state of training at Y-12 is currently satisfactory, a strong relationship between line management and the training organizations has not been established.

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 2, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: The training and qualification programs encompass the range of duties and activities required to be performed. **(CORE REQUIREMENT #2 and 9)**

Criteria

The tasks required for competent job performance are identified and documented through a systematic analysis of job requirements. The training program is based on the results of the analysis. Learning objectives are derived from this analysis.

Requirements for continuing training have been adequately defined and programs have been developed. Continuing training includes conduct of realistic drills to maintain proficiency in responding to abnormal and accident situations, including those involving radiological hazards. (5480.20A, Ch I, para 7.d)

Training programs for disassembly/assembly, quality and technical support personnel include training on the requirements contained in the approved operating basis for the facility. (5480.20A, Ch I, Para 7)

Training programs for operations and maintenance personnel emphasize the importance of compliance with procedures and safety requirements. (5480.20A, Ch I, Para 7)

The training department uses post-training feedback, internal evaluations (self assessment), and operating experience to modify the training program when needed. This includes:

- Using feedback on training effectiveness from trainees and supervisors,
- Incorporating feedback from operating experience at the site and from other Department of Energy sites,
- Conducting formal reviews of training effectiveness,
- Incorporating of comments from line management self-assessments and other audits.

Records demonstrate that facility representatives assigned to cover facility operations are qualified.

RA ASSESSMENT FORM 1
Training

Approach

Record Review: Review disassembly/assembly and quality personnel lesson plans for incorporation of safety requirements, operational safety requirements, and procedure compliance. Review trainee feedback forms, training evaluations of lessons learned from operating experiences, and formal training program reviews to verify feedback is addressed in a formal manner. Review the continuing training program plan and drill schedule to verify adequacy in supporting safe facility operations.

Review completed Facility Representative Qual-Cards, oral and written exam results proving qualification in accordance with the Oak Ridge Y-12 Site Office qualification guidelines.

Review training programs to ensure that subject matter experts, line management, and training staff develop and maintain a valid facility-specific task list as the basis for the training program; the facility specific list of tasks selected for training is reviewed periodically and updated as necessary by changes in procedures, facility systems/equipment, job scope, advances in technology, and Department of Energy or other appropriate training guidelines are used for selecting,sequencing and verifying training program structure and content.

Review examinations (written and oral) and performance evaluations to verify that they are based on learning objectives, are reviewed by subject matter experts, are changed frequently to avoid compromise and are formally controlled.

Interviews: Interview training personnel responsible for continuing and drill scenario development and implementation. Interview personnel responsible for establishing training needs for disassembly/assembly, quality and technical support personnel.

Shift Performance: Observe operator and maintenance support personnel response to drills. Evaluate a continuing training classroom lecture simulator training session or field training activity for technical and administrative adequacy.

Records Reviewed:

- Y-12 Training Manual
- Y/AD-623, Plan for Continuing and Resuming Operations at the Y-12 Plant
- Y-12 Training Procedures Y-90 Series

-010, Selection, Qualification, Certification, and Continuing Training
-020, Exceptions, Extensions, Alternatives, and Waivers
-030, Training records
-040, Conduct of Training Analysis
-050, Conduct of Training Design
-060, Conduct of Training Development
-070, Development, Control, and Administration of Examinations
-080, Conduct of Training Implementation
-090, Training Remediation
-100, Conduct of Training Program Evaluation

- DSO/QO Training and Qualification Records (20)
- Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization, dated February 26, 1996
- Corrective Action Plan for DNFSB Recommendation 94-4 Task 4 Assessment of Conduct of Operations, dated January 31, 1996
- Training Management System Data Base (TMS)-26 separate personnel data entries
- Summary Report: Y-12 Plant Training and Qualification Accomplishments as of December 31,1995, dated January 30, 1996
- Y-12 Training and Qualification Program Management Self-Assessment Plan
- Facility Representative Qualification Records (3)

Interviews Conducted:

- Training Manager, Disassembly and Storage Operations (DSO)
- Y-12 Quality Manager
- Quality Organization Management/Assessment and Compliance Branch Head
- Quality Organization Training Manager
- Quality Organization Training Coordinator
- Interim Y-12 Plant Training Manager
- Y-12 Drill Program Coordinator
- CCE Organizational Training Coordinator
- Quality Organization Training Analysts
- Y-12 Facility Representative

Shift Performance Evolution:

- Classroom training for Assembly Station Director, Module 06502
- Classroom training for Safeguards/Security Plans for D&S Areas, Module 13263
- Performance of Simulation Exercise, C-5 Unit Disassembly on February 28, 1996
- Performance of weldring degreasing, electropolishing and electron beam welding on February 29, 1996

RA ASSESSMENT FORM 1
Training

Discussion of Results:

Record Reviews: Lesson plans and examinations for Quality Organization personnel assigned as tenants for Building 9204-2E and for Disassembly/Assembly (D/A) personnel include the required training on the safety envelope. Comprehensive written examinations are administered and document the level of knowledge of operational safety requirements. Performance Document Checklists (PDCs), oral examinations, and operational evaluations are used to evaluate trainee mastery of On-The-Job training (OJT) and assess comprehension of training content. The written and PDC examinations are comprehensive and are prepared and graded by subject matter experts (SMEs). Examinations for the Quality organization have only recently been developed. As the program matures these examinations will need to be changed periodically to prevent their compromise.

There is no formal process for incorporating feedback and lessons learned from classroom training, OJT sessions and mock-up/simulation exercises into training programs. While student feedback forms are used to assess classroom training, they are normally returned to the instructor and not to the lesson preparer. Thus the program may not be corrected. There are some recent examples where lessons learned from OJT and mock-up/simulation exercises could have resulted in improved training programs, however, lack of a formal program to accomplish this process resulted in these lessons being lost. (TR2-1)

Reviews of the qualification records for three Facility Representatives (FRs) were conducted. Records of interim qualification for all FRs were determined to be adequate. Written examinations to establish qualification were not administered.

Interviews: Interviews with the Quality Organization training personnel indicated they were knowledgeable of the facility and processes used to perform dimensional inspection and non-destructive testing of components. A discussion with several training analysts concerning training program development occurred during the interviews. Recent efforts to develop the training program for the Quality organization included a thorough job and task analysis which was supported by 30 subcontractors.

Shift performance: A mock-up/simulation exercise of the C-5 unit disassembly was conducted by D/A and Quality Organization personnel and observed by the Readiness Assessment team. Personnel demonstrated that they could safely and adequately perform the disassembly. However, many deficiencies in the conduct of this exercise were noted. The pre-job briefing was of insufficient depth to ensure personnel were knowledgeable of the tasks to be performed. While the actual simulation exercise was well performed by the participants, several discrepancies were noted. Staging of tools to perform tasks was poorly accomplished. No consideration was given to reduction of radiological waste. Tools were not marked for radiological contamination. There was no apparent

consideration given to minimize cross contamination. Gloves were not changed when appropriate. Local decontamination was not considered. Some inappropriate tools were used including several adjustable wrenches and allen key sets. Pre-use inspections of lifting and handling equipment were not performed as required by the DOE Hoisting and Rigging Manual. Several tools, boxes and a pallet made of wood were used in the high contamination area making suitable decontamination impossible. The post mock-up/simulation critique did not incorporate any formal method for capturing and documenting lessons learned from the exercise. Differences between the mockup and the actual disassembly of the C-5 unit were not discussed to ensure the disassembly team was fully aware of conditions to be expected when the actual operation is performed. Records documenting the training and performance on the C-5 mockup were reviewed. The only training records associated with this evolution consist of post-job critiques and attendance records which are maintained by the Building 9204-2E Disassembly Supervisor. These records are informal, are not of sufficient detail, and lack the review of senior managers. The records do not adequately support a determination that training on this mockup is adequate to support resumption of operations. It is concluded that the training benefit from conducting the simulation on the mockup was not optimized. (TR2-1)

Conclusion: Training and qualification programs encompass the range of duties and activities required to be performed, however the lack of a formal process to incorporate lessons learned in training processes results in less than optimum training performance. The full potential for training and qualifying the C-5 Unit disassembly team was not achieved. The criteria for this objective have been met.

Issue(s):

o Training on the C-5 unit disassembly was not formally conducted. Critiques of this evolution did not capture lessons learned. Differences between the mock up and the actual disassembly of a C-5 unit were not delineated. Records documenting the training were of insufficient detail and lacked review of senior managers. (TR2-1)

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA DEFICIENCY FORM 2
Training

Functional Area: TR	Objective No.: 2	Finding X Observ.	Pre-Start Post-Start X	Issue No.: TR2-1 Rev. No.: 0 Date: 03/05/96

ISSUE: Training on the C-5 unit disassembly was not formally conducted. Critiques of this evolution did not capture lessons learned. Differences between the mock up and the actual disassembly of a C-5 unit were not delineated. Records documenting the training were of insufficient detail and lacked review of senior managers.

REQUIREMENT: Training programs shall consist of a combination of classroom-type and on-the-job training and include simulator and laboratory training as it applies to the position. The level of detail and content of the training program should reflect the training and qualification needs of the facility to assure personnel are qualified to carry out their assigned responsibilities.

Training on a simulator should be used to build operating team skills and/or enhance the effectiveness of hands-on skill training. Differences between the simulator and the facility/process are to be accommodated in the training session.

Mastery of the learning objectives by the trainees should be evaluated periodically during the training. Evaluations should be content valid, administered consistently, controlled, and documented (emphasis added) as appropriate to the level of assurance needed.

REFERENCE(S): DOE Order 5480.20A, Chapter I, paragraph 7.a.(2); (2) DOE-STD-1070-94, Objective 6, Criteria 6.5; and DOE Order 5480.20A, Chapter I, paragraph 7.b.(4).

DISCUSSION: A mock-up/simulation exercise of the C-5 unit disassembly was conducted by Disassembly/Assembly and Quality Organization personnel and observed by the Readiness Assessment team. While the actual simulation exercise was well performed by the participants, the post mock-up/simulation critique did not incorporate any formal method for capturing and documenting lessons learned from the exercise. Differences between the mockup and the actual disassembly of the C-5 unit were not discussed to ensure the disassembly team was fully aware of conditions to be expected when the actual operation is performed. Records documenting the training and performance on the C-5 mockup were reviewed. The only training records associated with this evolution consist of post-job critiques and attendance records which are maintained by the Building 9204-2E Disassembly Supervisor. These records are informal, are not of sufficient detail, and lack the review of senior managers. The records do not adequately support a determination that training on this mockup is adequate to support resumption of operations.

RA DEFICIENCY FORM 2
Training

CONCLUSION: The mock-up/simulation exercise was of limited training benefit because the lessons learned were not captured and promulgated to cause an improved level of performance. Differences between the mock-up and the actual C-5 unit disassembly process were not fully explained to the disassembly team. Records documenting this training were inadequate. Since the disassembly team demonstrated an adequate performance during this exercise, this issue is a post start finding.

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 3, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: The technical and management qualifications of contractor personnel responsible for facility operations are adequate. **(CORE REQUIREMENTS 13 and 19)**

Criteria

The technical qualifications of contractor personnel involved in disassembly/assembly activities, including management who are responsible for facility, up to the Manager, Nuclear Operations are verified. Entry-level requirements are established for each operations position, as applicable, including minimum education, experience, technical, and medical requirements. These requirements also include managers who are responsible for facility, up to the Manager Nuclear Operations. (5480.20A, Ch. I, para 9).

The applicable non-reactor nuclear facility managers, supervisors, operators, technicians, and technical support personnel have the required minimum education and experience levels. (5480.20A, Attachment IV)

Approach

Record Review: Review the procedures or policies that describe the personnel selection and entry-level requirements to ensure these requirements address the minimum physical attributes a trainee must possess, and the minimum educational, technical and experience requirements necessary for the employee to meet job requirements according to the requirements of the Oak Ridge Y-12 Site Training Implementation Matrix.

Review training records for the applicable non-reactor nuclear facility managers, supervisors, operators, technicians, and technical support personnel and verify the required minimum education and experience levels are met. Review training records for managers to determine if they have received adequate training in disassembly/assembly activities. Review training and qualification requirements for those mentors in place as compensatory measures.

Interviews: Interview operators and supervisors to ensure they understand the minimum staffing requirements for all phases of facility operations. Verify that the training and qualification of personnel are at a level sufficient to support resumption.

RA ASSESSMENT FORM 1
Training

Shift Performance: Assess staffing levels while observing drills and routine evolutions to determine their adequacy. Verify they satisfy administrative and safety basis requirements.

Records Reviewed:

- Organizational Charts for:
  - Center for Continuing Education (CCE)
  - LMES Disassembly and Storage Organization (DSO)
  - LMES Quality Organization (QO)
- Y-12 Training Manual
- Y/AD-623, Plan for Continuing and Resuming Operations at the Y-12 Plant
- Y-12 Training Procedures Y-90 Series
  -010, Selection, Qualification, Certification, and Continuing Training
  -020, Exceptions, Extensions, Alternatives, and Waivers
  -030, Training records
  -040, Conduct of Training Analysis
  -050, Conduct of Training Design
  -060, Conduct of Training Development
  -070, Development, Control, and Administration of Examinations
  -080, Conduct of Training Implementation
  -090, Training Remediation
  -100, Conduct of Training Program Evaluation
- DSO/QO Training and Qualification Records (20)
- Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization, dated February 26, 1996
- Corrective Action Plan for DNFSB Recommendation 94-4 Task 4 Assessment of Conduct of Operations, dated January 31, 1996
- Training Management System Data Base (TMS)-26 separate personnel data entries
- Summary Report: Y-12 Plant Training and Qualification Accomplishments as of December 31,1995, dated January 30, 1996
- Y-12 Training and Qualification Program Management Self-Assessment Plan

Interviews Conducted:

- Manager, Nuclear Operations
- Training Manager, Disassembly and Storage Operations (DSO)
- Y-12 Quality Manager
- Quality Organization Management/Assessment and Compliance Branch Head
- Quality Organization Training Manager
- Quality Organization Training Coordinator
- Interim Y-12 Plant Training Manager
- CCE Organizational Training Coordinator

- o 9204-2E Shift Manager
- o Supervisor of Disassembly Operations/9204-2E

Shift Performance Evolution:

- o Performance of simulation exercise, C-5 Unit Disassembly on February 28, 1996
- o Performance of weldring degreasing, electropolishing and electron beam welding on February 29, 1996
- o Fissile Material Container Storage Abnormal Condition Response Drill
- o Hazardous Spill Reporting and Responding Drill
- o Injured and Potentially Contaminated Worker Drill

Discussion of Results:

Record Review: Procedures and policies describing personnel selection and entry-level requirements were reviewed to ensure they address minimum physical attributes, and the minimum technical and experience requirements. Training and qualification records were reviewed to ensure that personnel met minimum education and experience levels. Procedures that address personnel selection, entry-level requirements, minimum physical attributes, educational, technical and experience requirements for job entry are addressed in the Y-12 plant training procedures. The recently issued Y-12 plant TIM documents an adequate verification of these requirements to the DOE Training Order, DOE 5480.20A. Reviews of the Y-12 plant personnel training records located in Building 9709 were performed. The records for the personnel supporting the Disassembly and Assembly and Quality Organizations are complete and address all requirements of the training order. Only minor discrepancies in the records were noted. Managers have received adequate training in D/A activities. Mentors are knowledgeable and well qualified to perform compensatory duties.

Interviews: Interviews with Disassembly and Quality Organizational personnel, building management, supervisors, Shift Technical Advisors (STAs) and operations personnel revealed that these personnel have the required experience level to perform their duties. None of the personnel who are filling the role of STAs have completed qualifications as their qualification program has not yet been fully defined. STA candidates interviewed indicated they would complete this qualification in six months. The roles and responsibilities of the STAs have yet to be fully determined. Establishment of this position appears to be an excellent measure to improve technical excellence, however, it is not specifically required by DOE for application to D/A operations.

Shift Performance: Staffing was observed during the performance of drills and evolutions. The staffing levels are adequate. During the performance of the C-5 unit disassembly the assigned mentor actively participated and

provided direction when required. Minimum staffing for the Plant Shift Superintendent's Office and Fire Department have been established to support the Operational Safety Requirement.

Conclusion: Procedures are in place to adequately support personnel selection, training, and qualification. The criteria for this objective have been met.

Issue(s):

o None

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 4, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: Procedures in use at the facility have been reviewed for potential impacts on training and qualification. Training has been performed to the latest revision of procedures. **(CORE REQUIREMENT #18)**

Criteria

Training has been completed and documented for the latest revisions of procedures performed by disassembly/assembly, quality and technical support personnel. (5480.20A, Ch. I, para 7)

Training programs incorporate formal on-the-job training and hands-on evaluation of skills based on the latest revisions of procedures performed by disassembly/assembly and quality personnel.

Approach

Record Review: Review the process used to evaluate disassembly/assembly, quality and technical support personnel training needs based on procedure revisions. Review lessons plans, and supporting examinations. Determine if lesson plans accurately reflect procedure changes. Review the examinations for appropriate scope and content. Review the degree to which on-the-job training and hands-on evaluations for operations and maintenance personnel are used to reinforce classroom activities.

Interviews: Interview training personnel to determine their involvement with procedure changes affecting lesson plans. Interview supervisors to determine how they incorporate procedure revisions into work planning.

Shift Performance: Observe disassembly/assembly, quality and technical support personnel in the performance of on-the-job training. Observe classroom training or a field training activity. During observation of operations using procedures, verify proper conduct and understanding of the procedures by the operators.

Records Reviewed:

- Y-12 Plant Training Manual
- Y-12 Training Procedures series 90
- Training Management System Data Base (TMS)
- Training Development Administrative Guide (TDAG), applicable to the Quality Organization
- Tri-Plant Equipment, Testing, and Inspection (ETI) Procedures

RA ASSESSMENT FORM 1
Training

Interviews Conducted:

- Training Manager, Disassembly and Storage Division (DSO)
- Training Coordinator, DSO
- Y-12 Quality Manager
- Quality Organization Management/Assessment and Compliance Branch Head
- Quality Organization Training Manager
- Quality Organization Training Coordinator
- Quality Organization Dimensional Metrology Branch Head
- Disassembly/Assembly (D/A) Facility Support Branch Head

Shift Performance Evolution:

- Classroom training for Assembly Station Director, Module 06502
- Classroom training for Safeguards/Security Plans for D&S Areas, Module 13263
- Simulation Exercise, C-5 disassembly on February 28, 1996
- Assembly & verification/weldrings degreasing, electropolishing, electron beam welder, part marking, inspection

Discussion of Results:

Record Review: Reviews of the Y-12 training records revealed that personnel in the D/A and Quality Organization have received training on recent revisions to procedures. Both organizations have procedures in place to screen revisions for training applicability and personnel administering these processes are knowledgeable of their duties. The TMS system is effectively utilized to document training on procedure revisions. Supervisors use the TMS system to ensure their personnel are current in this training. Quality Organization procedures to ensure that revisions to Tri-Plant (Y-12, ORNL, K-25) Equipment, Testing, and Inspection (ETI) procedures are screened for training applicability are not in place. Several Tri-Plant procedure revisions have been issued in the past three months. Training has not been conducted for these procedure revisions. (TR4-1)

Interviews: Interviews with personnel responsible for conducting training on procedure revisions revealed that they were knowledgeable and effective in ensuring that training was conducted in support of current operations. Lesson plans supporting procedures revisions are sufficiently detailed where required. Most procedure revisions result in determinations that required reading should be conducted. In the procedure revisions reviewed, this appeared to be appropriate. Supervisors were attentive to requirements to ensure their personnel were trained on procedure modifications.

Shift Performance: D/A operations and Quality Organization evolutions

observed were professionally conducted. Personnel were knowledgeable of procedure requirements. Classroom training observed was thorough and with the necessary emphasis on recent modifications to procedures.

Conclusion: Training has been performed to the latest revision to procedures. D/A personnel are knowledgeable of recent revisions to procedures and are able to utilize them effectively during operations and evolutions observed. The administrative process for ensuring Quality Organization personnel are trained to the latest revisions to procedures is deficient as there is no system to ensure that revisions to Tri-Plant ETI procedures are screened for training. The criteria for this objective have been met.

Issue(s):

- Quality Organization personnel are not trained on revisions to Tri-Plant ETI procedures. (TR4-1)

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

ORR DEFICIENCY FORM 2
Training

Functional Area: TR	Objective No.: 4	Finding X Observ.	Pre-Start Post-Start X	Issue No.: TR4-1 Rev. No.: 0 Date: 03/05/96

ISSUE: Quality Organization personnel are not trained on revisions to Tri-Plant ETI procedures.

REQUIREMENT: Qualification and certification programs shall be reviewed by contractor facility management and shall be kept up to date to reflect changes to the facility, Safety Analysis Reports, Technical Safety Requirements, procedures (emphasis added), regulations, and applicable industry operating experience.

REFERENCE(S): DOE Order 5480.20A, Chapter I, paragraph 7.a.(3).

DISCUSSION: Quality Organization procedures to ensure that revisions to Tri-Plant ETI procedures are screened for training applicability are not in place. Several Tri-Plant procedure revisions have been issued in the past three months. Training has not been conducted for these procedure revisions.

CONCLUSION: The process for reviewing procedure revisions as they apply to the operations conducted by the Quality Organization is inadequate. Not all procedure revisions have been screened for training applicability. This issue is a post start finding.

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 5, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A baseline compliance status review of Department of Energy Order 5480.20A has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All noncompliances identified by the Oak Ridge Y-12 Site Office compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance.

Compensatory measures specified in the Compliance Schedule Agreements are adequately understood and implemented by operations managers.

Approach

Record Review: Review the order compliance package for Department of Energy Order 5480.20A, including all applicable Compliance Schedule Agreements, exemptions and compensatory measures. For identified Request for Approvals, verify schedule commitments have been met and compensatory measures identified.

Interviews: If this Order is not fully implemented, interview management personnel to ensure their awareness of the noncompliance(s) along with actions necessary to fully implement the order requirements, and all interim compensatory measures. Ensure operations managers have reviewed the compensatory measures and corrective actions taken to address the non-conformance for site level programmatic and facility-level compliance and adherence-based assessments.

Shift Performance: Where appropriate, observe the implementation of any specified compensatory measures within the facility to determine their effectiveness.

Records Reviewed:

- Y/GA-66/R5, Training Implementation Matrix for DOE 5480.20A
- DOE 5480.20A Compliance Assessment Summary Report, dated February 14, 1996
- Request No.: LMES/Y-12-DOE-5480.20-CSA-82D, dated October 25, 1995

RA ASSESSMENT FORM 1
Training

- o DOE Oak Ridge Operations Office letter: Y-12 Plant Training Implementation Matrix (TIM), Revision 5, dated January 11, 1996

Interviews Conducted:

- o Interim Y-12 Plant Training Manager
- o Training Manager, Disassembly and Storage Division (DSO)

Shift Performance Evolution:

- o Training Working Group Meeting held on February 29, 1996

Discussion of Results:

Record Review: The Y-12 Plant TIM for DOE 5480.20A was submitted in November 1995 and approved by the Oak Ridge Operations Office on January 11, 1996. Full compliance with the order is being tracked by an Integrated Project Plan (IPP). Building 9204-2E personnel in DSO and QO organizations are scheduled to achieve full compliance with the order in May of 1997. There is one Request for Approval (RFA) outstanding. This RFA had been previously submitted and approved for the previous training order and was not required to be submitted for the new order. It recognizes some inadequacies in the process for establishing training and certification programs. A compensatory measure is specified which recognizes that implementation of these training and certification programs will occur as a part of the resumption efforts. Positions requiring certification and qualification in Building 9204-2E are specified. Attainment of these requirements was verified during a review of the training and qualification records. Eight positions filled by the Quality Organization and 9 positions filled by DSO require certification. The total number of persons in both organizations currently certified is in excess of 30. The large number of certifications creates significant numbers of proficiency requirements and causes a large work load on the training staff to support requalification of certified positions every two years. While the importance of certification is recognized, it is equally important to ensure that these requirements are carefully considered so that excessive certification requirements are not established. Discussions with training personnel concerning this issue indicate that some review of the totality of the certification scope should be conducted.

The Y-12 Plant Training Steering Board, addressed as the organizational body to establish major training policy in the Y-12 Plant TIM, has been replaced by a Y-12 Plant Training Working Group. This group has not been formally established. Membership in this group is generally at a lower seniority than the organization prescribed in the Y-12 Plant Steering Board in the TIM.

RA ASSESSMENT FORM 1
Training

Interviews: Discussions with training program personnel who support Disassembly and Assembly and the Quality Organization revealed that they were knowledgeable of actions required to achieve compliance with DOE 5480.20A. A comprehensive Standards Requirements and Identification Document (SRID) has been prepared to capture all training compliance requirements. Personnel are aware and supportive of actions planned to comply with this document.

Shift Performance: A Training Working Group meeting was conducted on February 29, 1996 and attended by the training representatives of the D/A Readiness Assessment Team. This meeting was effective. A major concern of personnel at the meeting was the effect of impending changes to training requirements such as the promulgation of the Training Rule and necessary and sufficient criteria. Personnel involved in the Training Working Group are actively discussing options to respond to these changes in policy.

Conclusion: A baseline compliance review of the requirements of DOE 5480.20A within the areas of Disassembly and Assembly activities has been performed. Noncompliances are appropriately identified, and corrective measures are documented and are presently being implemented. The criteria for this objective have been met.

Issue(s):

o None

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 6, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A routine operations drill program, including program records, has been established and implemented **(CORE REQUIREMENT #9)**

Criteria

An effective routine (non-emergency) operations drill program has been established to assure operator readiness and knowledge of appropriate responses to indicators. Drills and exercises are conducted and an adequate response capability is demonstrated to exist. (5480.19, Ch. VI, 5480.20A, Ch. I, Section 7)

Approach

Record Review: Review the drill records which describe the routine drills that have been conducted in the past year. Determine if the drill scenarios were adequate and if the requisite number of drills have been conducted to fully test personnel and, procedures and equipment in a broad range of facility operations. Determine if lessons learned from drills are factored into subsequent drills and training.

Interviews: Interview personnel responsible for the development and conduct of drills to evaluate their understanding of the purpose of the drill program, and their ability to execute it.

Shift Performance: Attend and assess drill preparations, pre-briefs, conduct and critiques. Determine if operational drills test operators and operations support personnel with realistic and challenging scenarios. Evaluate whether an adequate response capability exists.

Records Reviewed:

- Y-12 Plant Procedure, Y-10-01-210, Conduct of Drills
- Disassembly and Storage Organization 1996 Drill Program
- Drill Schedule for 1995/1996
- Drill Guide 2-0001, Rev. B, Fissile Material Container Storage Abnormal Condition response
- Drill Guide 2-0006, Rev. A, Hazardous Spill Reporting and Responding
- Drill Guide 2-0015, Rev. A, Injured and Potentially Contaminated Worker
- Other 9204-2E Drill Guides (12)

RA ASSESSMENT FORM 1
Training

Interviews Conducted:

- o DSO Drill Program Coordinator
- o DSO Facility Senior Drill Monitor
- o Facility Representative
- o Building 9204-2E Mentors

Shift Performance Evolution:

- o Fissile Material Container Storage Abnormal Condition Response Drill
- o Hazardous Spill Reporting and Responding Drill
- o Injured and Potentially Contaminated Worker Drill
- o Injured and potentially contaminated worker

Discussion of Results:

Record Review: The drill program records were reviewed with the DSO Drill Program Coordinator. A program of 15 drills for the Building 9204-2E has been established. Drills are specified to be run every two weeks. The building has met this schedule and in some cases has run extra drills. The current schedule for conducting drills is approved by the Manager, DSO and is adequate to support the continuing training program. Drill scenarios in use emphasize basic responses by building personnel. Changes in the scenarios have been made and more are contemplated to increase the complexity of drills as proficiency improves. The DSO Drill Program Coordinator is aggressive and has a plan for integrating more challenging drills in the future.

Interviews: Personnel responsible for planning, coordinating, and running drills are knowledgeable of the expected level of excellence to be achieved by the continuing training program and fully understand the role drills play in this program. The organization to support running drills at Y-12 is sound. Personnel in place are capable of causing an improved level of performance of operation by their professional approach to planning, running, and critiquing drills. The drill planning team consisting of the DSO Drill Program Coordinator, Facility Senior Drill Monitor, Shift Operations Manager, Facility Representative and mentors are well qualified to carry out drill program responsibilities.

Shift Performance: Drills run during this readiness assessment were not initially well coordinated among the various organizations required to support the drills. Senior managers were not initially involved in ensuring this coordination was accomplished, and as a result several activities outside the D/A activities were reluctant to participate as required. Subsequent senior management involvement occurred resolving this issue, however excessive delays occurred in briefing and initiating drills. Three drills were conducted. Two of the drills tested basic responses to minor abnormalities. A third drill of significantly more complexity was run at the request of the Readiness Assessment Team. This

required the preparation of a unique drill scenario and obtaining management approval of a new drill guide during the conduct of this readiness assessment. The drill team was able to staff this effort and initiate, monitor, and critique drill performance in a professional manner. Some problems were noted in implementing drills. The drill team did not initiate one drill exactly as specified in the drill guide. For another drill, the Facility Senior Drill Monitor specified a different scheme for initiating the drill at the drill pre-brief. This deviation was questioned by the Facility Representative and resolved so that compliance with the drill guide was reinforced. The performance of drills and the formality of conducting drills has improved since the Readiness Assessment for Receipt, Storage, and Shipment. An adequate response capability has been established for Disassembly and Assembly Operations.

Conclusion: The criteria for this objective have been met.

Issue(s):

o None

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

96/1570

Department of Energy

Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, Tennessee 37831—8555

Y-12 Site Office

March 22, 1996

Mr. Gordon G. Fee, President
Lockheed Martin Energy Systems, Inc.
Post Office Box 2009
Oak Ridge, Tennessee 37831

Dear Mr. Fee:

AUTHORIZATION TO RESUME OPERATIONS OF THE DISASSEMBLY AND ASSEMBLY ACTIVITIES AT THE Y-12 PLANT

In accordance with the requirements of DOE Order 5480.31, "Startup and Restart of Nuclear Facilities," all the necessary preparations have been made to ensure that all Disassembly and Assembly (D&A) activities can be operated safely. This authorization is also based on successful verification of closure of all pre-restart findings from various reviews conducted on D&A. Therefore, Lockheed Martin Energy Systems, Inc., is authorized to resume operations, as specified in the LMES Document Y/OA-6238, "Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," dated January 4, 1996.

Sincerely,

James C. Hall
Manager

cc:
R. R. Nelson, DP-80, ORO
R. J. Spence, DP-81, ORO
T. S. Tison, DP-811, ORO

DOE F 1325.8
(4/93)

96/1570

United States Government **Department of Energy**

Oak Ridge Operations Office

memorandum

DATE: March 26, 1996

REPLY TO ATTN OF: DP-811:Christenson

SUBJECT: **Y-12 SITE OFFICE RESTART TEAM DISASSEMBLY AND ASSEMBLY ACTIVITIES CLOSURE REPORT**

TO: Robert J. Spence, Y-12 Site Manager, DP-81, ORO

Attached is the final "Y-12 Site Office Restart Team Disassembly and Assembly Activities Closure Report," dated March 26, 1996. This report is submitted to meet the near-term deliverable N.4.2 of the 94-4 Implementation Plan, and it summarizes the activities conducted to close the DOE Readiness Assessment pre-restart findings identified during the review of Disassembly and Assembly Activities.

If you should have any question or need additional information, please contact Dale Christenson at 4-3964 or me at 6-9854.

for Thomas S. Tison
Restart Team Manager

cc w/attachment:
D. L. Wall, DP-81

96/1570

Department of Energy

Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, Tennessee 37831—8555

Y-12 Site Office

March 22, 1996

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Restart Team Manager

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D. L. Wall, DP-81

U. S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

Y-12 SITE OFFICE RESTART TEAM

DISASSEMBLY AND ASSEMBLY ACTIVITIES CLOSURE REPORT

MARCH 26, 1996

D&A Resumption Area Lead: _____ **Date:** 3/26/96
Frank S. Poppell

D&A Team Leader: Mark A. Lundie for DE Christenson **Date:** 3/26/96
Dale E. Christenson

Restart Team Manager: Mark A. Lundie for TS Tison **Date:** 3/26/96
Thomas S. Tison

U. S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

Y-12 Site Office Restart Team

Disassembly and Assembly Activities Closure Report

A DOE Readiness Assessment (RA) was performed for the resumption of the Disassembly and Assembly (D&A) mission area from February 26 through March 7, 1996, as mandated by DOE Order 5480.31, *Start-up and Restart of Nuclear Facilities*. The DOE RA was necessary following a stand-down of Y-12 Plant facilities on September 22, 1994. The resumption strategy resumes Y-12 nuclear operations by mission area. D&A was the third mission area to be resumed under this strategy. The DOE RA team's report, *Readiness Assessment for Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant*, dated February 26 through March 7, 1996, identified three pre- and five post-restart for resolution and closure by Lockheed Martin Energy Systems (LMES). These findings were formally transmitted to LMES by the DOE Y-12 Site Office (YSO). One pre-restart and one post-restart finding was identified for resolution and closure by DOE. The YSO is responsible for closure of all findings with the exception of the one pre-restart DOE finding which was closed by the Office of the Assistant Manager for Environment, Safety, and Quality.

Prior to resumption of D&A, the Y-12 Site Office Restart Team (YSORT) verified adequate implementation of the LMES corrective actions for the pre-restart findings and validated the corrective action plans for the post-restart findings. Verification of the post-restart findings will also be performed by DOE as LMES submits findings for closure in accordance with established closure dates. Weekly meetings between DOE and LMES are held to discuss the status of the corrective actions for resolution of the post-restart findings. The findings and associated corrective action plans have been entered into the LMES Energy Systems Action Management System (ESAMS). The closure packages for LMES actions in response to the DOE RA findings are available in the Quality Organization and YSORT evidence files.

Four areas of concern were identified during the DOE RA related to; 1) training program and control of personnel certification, 2) LMES start-up plan to integrate management of follow-on graded operations, 3) enhanced DOE oversight plan to support the integrated LMES resumption, and 4) audible/visual alarm capability of Criticality Accident Alarm System (CAAS). The DOE RA team concluded that D&A activities can be safely restarted upon correction of LMES Management Self-Assessment, LMES RA, and DOE RA pre-restart

findings. Specific corrective actions to all DOE RA pre-restart findings are as follows:

Finding No. MG7-1: "Planned oversight coverage to support resumption of the Disassembly and Assembly operations has not been documented."

Corrective Actions: LMES Procedure Y10-190, *New Activity Start-up Control*, was reviewed for adequacy. It was determined that initial fissile material disassembly operations that deal with the actual unit disassembly will require additional oversight by YSO. The Y-12 Site Manager issued a memorandum to the Lead Facility Representative (FR) and the YSO Branch Chiefs directing these oversight requirements. In addition, the Y-12 Site Manager issued a letter to LMES directing timely notification of all disassembly activities. The FRs will observe both operations and management's supervision of the initial disassembly work. The FRs shall continue observation of disassembly activities until they are confident that operations can proceed on a routine basis at which point the Y-12 Site Manager shall approve decreased observation activity. The YSO ES&H and Program Management Branches will review those safety programs related to D&A operations as part of the "Y-12 Site Office Annual Assessment Plan," and will concentrate on continuous improvement in the areas of conduct of operations, document control, procedures, criticality safety, training, and lessons learned for all continuing nuclear operations at the Y-12 Plant following the restart of D&A. For future D&A activities, the contractor will be required to evaluate changes to procedures, equipment, training, and personnel using Procedure Y10-190. YSO will monitor the contractor's evaluation and make a judgement as to its effectiveness prior to the start-up of the new activity.

Finding No. OP5-1: "An adequate start-up plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment,

the viability of procedures, and the adequacy of training of operators."

Corrective Actions: LMES developed a generic start-up plan for D&A and disseminated this plan to the Nuclear Operations organization to ensure normal operations are resumed in a safe and efficient manner following restart approval. To address the programmatic implications of this finding, a procedure change request was issued requesting that the start-up plan requirements be added to Procedure Y10-190 during the next revision.

Finding No. SE1-2: "The alarm signal for the CAAS in the 9204-2E Material Access Area does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the Operational Safety Requirements (OSRs)."

Corrective Actions: Modified portable radiation detection devices have been provided to organizations that are required to use them. These detectors provide audible and visual indications that a criticality may have occurred and latches in the alarm condition upon activation. A Standing Order (SO) was issued by the Vice President of Defense and Manufacturing to operations, utilities, emergency response, and maintenance personnel providing guidance on the control of operational activities in high-noise areas covered by the CAAS and establishes requirements for the use of the portable radiation detection devices in these areas. For a period of several weeks as routine shift turnover occurs, personnel are being re-briefed on the proper use of these devices prior to their use. In addition, post-restart corrective actions have been developed to perform an Unreviewed Safety Question Determination (USQD) of the as-found condition along with an OSR revision, if necessary, and to complete an engineering study of the high-noise areas including a risk analysis of the study's recommendations to determine long-term corrective action.

Finding No. TR1-1: "Procedures and practices to remove certifications from personnel who do not maintain proficiency are not

established. A qualified personnel list is not maintained for the Quality Organization."

Corrective Actions: The Operations Manager issued Standing Order No. SO-9204-2E-96-014 providing instructions for maintaining certification and proficiencies. This SO establishes requirements for maintaining a program that will track, record, evaluate, and reestablish proficiency and is applicable to those personnel who are required to be certified to perform fissile material activities within the facility. A list of qualified personnel from the Quality Organization who support the D&A mission area was developed and issued to the Operations Manager. Quality Organization SO Nos. 96-06, *Instructions for Maintaining Proficiencies*, and 96-07, *Instructions for Maintaining Certifications*, were issued to establish requirements for maintaining a program that will track, record, evaluate, reestablish proficiency and establish a list of qualified personnel. In addition, post-restart corrective actions have been developed to identify Quality Organization personnel assigned to support conduct of operations implementation in Buildings 9204-2 and 9204-2E as defined in SO No. 95-05, *Building 9204-2/2E Memorandum of Understanding*, and to provide training to these personnel on Chapters I, II, V, VI, VIII, IX, XV, XVI, and XVIII of the Nuclear Operations Conduct of Operations Manual.

Based on review and verification of the corrective actions developed for the above-mentioned findings, there is sufficient evidence to conclude that the findings were adequately closed and that the corrective actions have been adequately implemented. The post-restart findings have been incorporated into both ESAMS and YSO tracking systems for closure. The YSO will continue to monitor the contractor's continuing operations in D&A, in subsequent resumption areas, and in special operations to ensure lessons learned from this restart review are incorporated. This will be accomplished through the established assessment programs of the FRs, the YSO ES&H and Program Management Branches, and the YSORT.