



95-0004970

## Department of Energy

Washington, DC 20585

OCT 11 1995

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DNF SAFETY BOARD

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

Dear Chairman Conway:

In April 1995, you provided a letter outlining the Board's concerns regarding the inadequacies in the emergency response program at the Rocky Flats Environmental Technology Site (RFETS), including a report on unsatisfactory performance witnessed by Board staff during the March 29, 1995, "Ready-94" emergency exercise. You also indicated that the Board was concerned about the lack of effective closure of deficiencies from prior emergency exercises and asked what we were doing to improve methods for satisfactory closure. The following information is provided to respond to your concerns, as well as those expressed in your October 6, 1995 letter about our delays in responding to your April 1995 request.

Performance by the operating contractor, EG&G, during "Ready-94" was disappointing and was judged unsatisfactory by the Rocky Flats Field Office (RFFO), Board staff and other observers. As you correctly pointed out, inadequacies from the prior year's exercise, "Ready 93," were evident during this year's exercise. The RFFO evaluation of the exercise found many of the same inadequacies identified by the Board's observers. These findings are detailed in the enclosed "Final Department of Energy RFFO Evaluation of Ready-94." Many of the issues identified indicate inadequate training in effective response procedures. The overall poor performance indicated a need for increased drills to exercise all facets of the RFETS Emergency Response Organization (ERO).

Corrective actions for "Ready-94" have been initiated including training sessions, tabletop discussions and field drills for the Incident Command Organization (ICO). Ten field drills were conducted in May 1995, and June 1995, to address problems observed during "Ready-94." Results from additional sitewide drills conducted on June 7, 1995, and on June 22, 1995, and actual emergency response to a hydrochloric acid spill on June 14, 1995, indicate significant improvements to response and hazard mitigation. Also, the





evaluation of the latest sitewide drill, conducted on September 19, 1995, showed improvement in the deficiency areas.

The Department's Office of Emergency Management also evaluated the performance of RFETS in "Ready-94." Their report of May 25, 1995, concurred with the majority of the Board's conclusions. They subsequently performed a technical assist appraisal for RFETS from June 19 to June 23, 1995, which included the June 22 sitewide drill for the new Kaiser-Hill emergency response organization. Though the scope and objectives of this drill were different, it did demonstrate improvements in several areas criticized in "Ready-94." The Headquarters Office of Emergency Management will evaluate the next annual sitewide drill and will provide their findings to you.

While significant improvement has been made, there is still a lack of discipline within the ICO that reduces the effectiveness of the response program. Routine tabletop exercises and field drills will be conducted on a recurring basis to assure satisfactory resolution of emergency response program deficiencies. These drills will be expanded to include multi-point failure scenarios, providing experience in more realistic emergencies. A review of the qualification program for personnel filling ERO positions will be completed and additional training will be conducted. This activity is essential in light of the transition to the new integrating contractor, Kaiser-Hill.

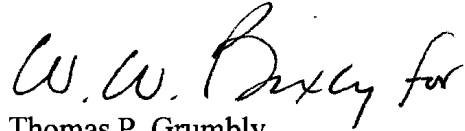
As indicated above, the preferred approach to ensuring satisfactory closure of weaknesses and deficiencies disclosed in drills and exercises is through the conduct of additional drills. Drills have both training and evaluation objectives and will be selected to specifically challenge the participants. Critical evaluation of performance will address prior findings of inadequacy and identify additional opportunities for improvement. Contractor performance will be monitored by the RFFO Nuclear Safety and Emergency Preparedness Division. Appropriate performance objectives and performance measures will be added to the Kaiser-Hill contract to improve performance as necessary.

In response to your October 6, 1995 letter, the cause of the delay in responding to your April 1995 letter is due, in part, to an ineffective, cumbersome management process that precluded a timely evaluation and response to your concerns. This is an area of major concern to me. I have taken steps in our recent EM reorganization to focus our attention on Defense Board matters and commitments by creating the new Office of Safety and Health led by John Tseng. The reorganization, while improving our entire EM management process, will help strengthen our focus on the technical safety and health issues confronting EM.



I apologize for the delay in responding to your concerns. We will continue to monitor emergency response program performance, and work towards an effective emergency response capability. As always, we invite you and your staff to review our progress in this area.

Sincerely,

Handwritten signature in cursive script, appearing to read "W. W. Bixley for".

Thomas P. Grumbly  
Assistant Secretary for  
Environmental Management

Enclosure



95 / 4970

**FINAL**  
**DOE RFFO Evaluation of READY-94**



**Rocky Flats Field Office**  
**Nuclear Safety and Emergency Preparedness Division**

**June, 21, 1995**

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## Contents

1.	Introduction .....	1
2.	Scenario Overview .....	1
3.	Locations and General Assessments .....	2
4.	RFFO Objective and Emergency Management Guide Standards and Criteria Evaluation .....	3
5.	External Organization Evaluations .....	4
6.	Past Drill/Exercise Considerations .....	4
7.	Assessment of RFFO Response .....	5
8.	RFFO Proposed Corrective Actions .....	6

## APPENDICES

Appendix A	Emergency Management Guide Criteria Evaluation .....	A-1
Appendix B	RFFO Observations of March Site Drills .....	B-1
Appendix C	Contractor-Identified READY-94 Objectives .....	C-1



## DOE RFFO Evaluation of READY-94

The Rocky Flats Environmental Technology Site (RFETS) performed Unsatisfactorily in the recent emergency response drill, READY-94. Unsatisfactory performance was observed by RFFO and external organization personnel at the Emergency Operations Center (EOC), on-scene, at the State Emergency Operations Center (SEOC), and at the Joint Public Information Center (JPIC). The Jefferson County Incident Command Post (JeffCo ICP) and Field Sampling Team (FST) were observed with overall satisfactory performance though there were some unsatisfactory aspects of performance as well. The on-site medical response and off-site medical transportation were areas where performance was effective.

Many of the issues identified indicate inadequate training and/or inadequate resources at the various emergency response facilities. Some of the issues are more significant and will require procedural and perhaps policy changes. The overall performance indicates there is a need for increased drills to exercise all facets of the Emergency Response Organization (ERO).

### 1. Introduction

This report contains the observations and evaluations by the Rocky Flats Field Office (RFFO) of READY-94. READY-94 was a full-participation exercise at the Rocky Flats Site that included participation from State and local government agencies and medical facilities. Technical and response areas covered by RFFO included operations of the EOC and Hazard Assessment Center (HAC); Incident Command, first responder, radiological control technician, industrial hygiene and safety on-scene; onsite medical response; radiological field sampling; SEOC and JPIC operations; and the operations at the JeffCo ICP.

Appendix A contains details regarding RFFO evaluation of the demonstration of compliance with the Emergency Management Guide (EMG) Criteria for Drills and Exercises.

### 2. Scenario Overview

The exercise began at approximately 8:20 am on March 29, 1995. The scenario began with a routine waste transfer from Building 886 to Building 771. During the movement, the transport vehicle experienced mechanical problems and crashed into Building T760A. There was an adjacent propane tank that caused a violent explosion. Two individuals were killed in the transport vehicle, and eight persons were injured (four critically and four with minor injuries) in the vicinity of Central Avenue and Portal 1 entry.

The explosion destroyed the cab of the truck, ruptured the cargo area, and exposed an undetermined number of the waste containers. The containers are 55-gallon drums with a maximum of 10 grams of material per drum. A total of 10 drums were being transported. Investigation of the accident area revealed that there was one additional fatality in Building T760A.

The initial emergency classification was an ALERT due to the potential release of an unknown substance. The event was reassessed and reclassified to a SITE AREA EMERGENCY due to the potential un-monitored release of controlled materials following confirmation of breached drums. The JPIC and SEOC were activated when the emergency was upgraded.

### 3. Locations and General Assessments

The purpose for having an Offsite Coordination Center (OCC) and for providing support to the JPIC at the SEOC is to address the need for State, public and media personnel to have access to Rocky Flats personnel to facilitate the release of timely and accurate information. This need was not met in the SEOC or JPIC. Information was coming into the SEOC from multiple sources. Information into the JPIC came from the EOC at RFETS and from the SEOC. Information conflicted at times and there were numerous questions regarding what information was 'confirmed'. This caused delays in previously scheduled media briefings, little information going to the phone operators, and release of incorrect information to the media.

Medical response was observed onsite at Occupational Medicine (OM) as well as preparation for offsite transportation. The offsite medical transportation went well with Radiological Control Technicians (RCTs) being dispatched with the victims and proper contamination control procedures followed. Medical response onsite in OM went according to procedures. RCT support provided to OM was more than adequate. However, OM did not receive any initial casualty status from the Emergency Medical Technicians (EMTs). Triage tags were initiated at the scene by the EMTs but did not arrive at Medical with the victims. Therefore, it was not clear how many patients or what kind of injuries would be received and OM had to implement their own triage system.

The staff in the EOC tried to establish control of the incident rather than providing resources and support as needed by the Incident Commander (IC) and filling the strategic planning function. This attempt to control the scene from a remote location by the Crisis Manager (CM) was inconsistent with plans and procedures and ineffective. Micro-management from the EOC that had particular safety concerns was the HAC Manager authorizing a front-end loader driver to enter the incident area without respiratory protection. Safety personnel on-scene stopped the driver and would not allow him to proceed since the personnel protective equipment (PPE) required to enter the incident scene included respiratory protection.

The RFFO Representative to the JeffCo ICP was able to meet most of the needs of the County personnel at that location. However, the lines of communication used were not appropriate which caused confusion at the JeffCo ICP and the SEOC. The RFFO Representative had been to the facility once (the previous day) and should receive additional training. Additional information resources are needed at the JeffCo ICP.

RFFO evaluation of the Field Sampling Team (FST) assembly and FST 'A' is that the response was much improved over past drills and exercises. Technical knowledge of equipment and its limitations was excellent as demonstrated by both the FSTs and the evaluator. The most significant problem was related to PPE. There were not enough SCBAs available to outfit all FST Teams and Industrial Hygiene support was not provided with the FSTs to assist with PPE determination and to monitor for chemical hazards.

The most significant problems identified from RFFO evaluation of the response on-scene are all recurring problems that had been identified as recently as during critiques of drills performed less than a month before READY-94. Field responders did not know where the on-scene Command Post was located (i.e., no green flag or beacon set up to designate the location). The location selected for the Command Post (both initially by Fire Command and subsequently by the Shift Superintendent) was downwind from the incident. Wind direction must be given consideration when locating the Command Post. However, when

the situation prevents an upwind Command Post location, appropriate provisions must be in place such as decontamination, PPE, and habitability monitoring.

Immediate on-scene support by the RCTs did not occur putting the first responders at risk. On-scene support from Industrial Hygiene occurred after RCT support. The Industrial Hygiene support that did arrive was not properly equipped for the incident. The IC on-scene had limited control of field resources since the CM in the EOC assumed command and control of the incident. This did not provide for accountability or control of on-scene activities. Also, with direction coming from the EOC to field resources and information gathered by those resources going directly to the EOC the IC was not provided with information in a timely manner.

#### **4. RFFO Emergency Management Guide Standards and Criteria Evaluation**

The Objectives provided with the contractor Exercise documentation package included multiple criteria required to meet each objective. Appendix C contains the contractor-identified Objectives for RFETS response during READY-94. The Emergency Management Guide (EMG) criteria which apply to the contractor objectives are identified as well.

The day before the exercise RFFO was informed that Objective 7 regarding a shift change in the EOC would not be tested. Objective 13 was not applicable since the public within the emergency planning zone was not required to be notified. The exercise was terminated (by a participant) prior to fully testing Objective 16 regarding reentry and recovery. Objective 18 was not applicable to the scenario. Based on the response during READY-93, demonstration of the capabilities contained in Objectives 7, 16, and 18 were specifically requested by RFFO at the initial scenario design meetings with the State and the contractor for READY-94.

RFFO evaluated READY-94 based on the EMG standards and criteria. Appendix A contains a detailed RFFO evaluation of READY-94 against the EMG Drill and Exercise Criteria. In summary, eight of the twelve standards contained in the EMG were either not met, were met in part, or the scenario did not accommodate evaluating enough of the criteria to make a determination. These eight standards include emergency response organization, consequence assessment, protective actions, public information, emergency response staff activities, security measures (not enough of the criteria could be evaluated to make an assessment), recovery and reentry, and conduct of exercise.

One of the significant recurring problems during drills and exercises is the ineffectiveness of the critique process to correct response problems by incorporating lessons learned in follow-up training. An in-place participant critique occurred immediately following termination of READY-94 at all locations. A controller/evaluator critique with all controller/evaluators occurred the next day. A lead/key controller/evaluator critique occurred sometime later. The last critique was the only one where it was planned to discuss corrective actions. This is the process followed for most drills and exercises including the two March Site Drills. Since participants did not hear the perspective of responders in other locations or the critical evaluation of the controller/evaluators, many of them did not know if their response activities were appropriate and effective.

One of the EMG criteria directly related to the ability to improve response and correct problems is accurate self-evaluation and reporting. The controller/evaluator critique identified the same problems, as well as others, as the RFFO and external

organization evaluations. The contractor report has not yet been issued. A letter report will be prepared to document the RFFO assessment of the contractor evaluation and corrective action identification process.

## **5. External Organization Evaluations**

Observers from various external organizations evaluated READY-94. These external observers were primarily located on-site. External organizations included DOE Headquarters NN-60 personnel, Defense Nuclear Facility Safety Board (DNFSB) staff, and Colorado Department of Public Health and the Environment (CDPHE) staff. The NN-60 personnel were located on-scene, in the EOC, and at the JPIC. The report from NN-60 identifies two issues as requiring immediate corrective action. The first is the lack of timely and appropriate RCT support for the IC as noted above. The second issue is the micro-management by the contractor upper management in the EOC but not filling a designated position. The NN-60 evaluation was performed in preparation for an upcoming technical assistance visit.

DNFSB observed in the EOC and on-scene. A copy of their evaluation has been reviewed. RFFO agrees with the overall conclusions reached by the DNFSB regarding the acceptability of the READY-94 response.

The evaluation report from CDPHE concentrated on the State's response in the SEOC and at the RFETS EOC. Issues noted by CDPHE that concern RFETS response during READY-94 include:

- Lines of communication between EOCs were unclear, too numerous, subject to transmission of unvalidated information from sources that were not always recognized as authoritative.
- The RFETS OCC and JPIC personnel both lacked technical support and were unable to respond to questions regarding risk to the public, meaning of the TRAC screens and the differences between enriched, natural and depleted uranium.
- Personnel in the JPIC were all new and have never exercised together. READY-94 was successful in providing a valuable learning experience for them. Some players were not aggressive and would have suffered severe criticism with regard to actually carrying out their emergency management/public information mission. They need more practice.

## **6. Past Drill/Exercise Considerations**

Many of the problems observed by RFFO and discussed at the critique following READY-94 had been identified in observations and critiques of the previous two Site Drills which occurred on 3/7 and 3/15. The most significant of these includes:

- Lack of timely/immediate RCT and Industrial Hygiene support on-scene.
- No identification of location of Incident Command Post.
- No identification of a staging area on-scene for personnel or material resources.
- Inability of EOC to provide on-scene responders with resources.
- Excessive information requests/demands of the IC by the CMT.
- Industrial Hygiene support was not provided for the FSTs performing radiological monitoring.
- Access control and accountability on-scene.

RFFO observations from the two March Site Drills are included in Appendix B.

RFFO also observed recurrent problems from READY-93. They include:

- Inability of CDPHE personnel in the SEOC to accurately read the TRAC screens.
- Lack of demonstration of appropriate offsite law enforcement interface.
- The criteria scheme for determining emergency classification is not understood by DOE or CDPHE personnel in the SEOC.
- Many plant personnel did not observe the direction to shelter.
- Information provided to the news media from the JPIC was not timely or accurate.
- A Technical Spokesperson trained to deal with the media was not provided at the JPIC and the OCC Manager had to fill the position though he had not been trained to do so.
- Necessary drawings and reference materials are not stocked at emergency facilities particularly the SEOC, JPIC, and the JeffCo ICP.

The problems above were identified following READY-93 as deficiencies or weaknesses by the contractor. A review of the PATS status report from April of 1994 showed that corrective actions were identified and entered in PATS and completed for the TRAC and JPIC related items above. However, since these items re-appeared as problems in the RFFO evaluation of READY-94, corrective actions implemented were not effective.

#### **7. Assessment of RFFO Response**

RFFO fills several ERO positions. The primary function of these positions is to ensure that emergency actions are appropriate; to perform offsite communications with federal, state, and local officials; and to assume control of the EOC if necessary. RFFO personnel are located in the CMT, the Crisis Support Team (CST), the SEOC, the JPIC, and the JeffCo ICP.

The RFFO positions observed during the response to READY-94 were:

CMT  
DOE Manager  
DOE Deputy Manager

CST  
Safety & Health Technical Advisor  
Security Technical Advisor

SEOC  
OCC Manager

JPIC  
DOE Spokesperson

JeffCo ICP  
DOE Representative

The frequency of required communication flow from the EOC to the SEOC through the DOE Deputy Manager during READY-94 was improved over the previous drill. However,

the effectiveness of the communications was lacking in that the information provided did not give a clear picture of the incident. This exercise, the previous two drills, and past drills show that not all RFFO EOC personnel have a clear understanding of DOE's role in the EOC during a response. The lines of communication for RFFO within the EOC and the resources available to the RFFO personnel are also unclear.

The primary function of the OCC Manager is to provide technical and response status information from the Site to the offsite officials located in the SEOC. While the flow of information from the Deputy Manager to the OCC was frequent, it was not effective. The SEOC personnel never had a clear picture of the incident based on the information provided by the RFETS EOC. The OCC Manager could not answer some of the technical questions raised by the State personnel in the SEOC and did not make use of the resources available such as the copy of the Site Emergency Plan and volume of procedures located in the SEOC. An additional function the OCC Manager had to fill due to the elimination of the OCC Operations position was Technical Briefer for the JPIC and media. This may work well in some cases but the OCC Manager during READY-94 did not have the appropriate background. Neither Rocky Flats JPIC personnel nor the OCC Manager were able to address technical environmental or health physics related questions. Also, JPIC Technical Briefers should be trained on how to respond to the media. This training is currently not identified as required for the OCC Manager. Corrective actions for the problems identified in this and the previous paragraph are discussed below in Section 8 under RFFO ERO Training and Response Aids.

The DOE Spokesperson had not responded to JPIC activation previously. Since the Public Information plan had not been issued prior to READY-94, it is assumed that training provided was minimal. The primary interfaces at the JPIC for the DOE Spokesperson are State players that were also new to the positions with little training. The response indicated that training and additional drills and/or tabletops must be provided. The most important areas for training and drills include handling media briefings with accurate and approved information for release to the media and public. The JPIC Activities section under the Section 8 discussion contains corrective actions to address these problems.

The DOE RFFO Representative responding to the JeffCo ICP performed well. However, the information flow was backward and duplicative. The DOE Representative at the JeffCo ICP was contacting the DOE Deputy Manager to receive briefings and pass information on to the OCC Manager. The information flow per procedures was to go from the DOE Deputy Manager to the OCC Manager, to the DOE Representative at the JeffCo ICP. As a result, the Deputy Manager was duplicating briefings and perhaps providing different information to two sources since the most recent information was always provided. This was a cause of much uncertainty in the SEOC and the JPIC (particularly since the DOE Spokesperson was also getting briefings from the EOC). Response materials staged at the JeffCo ICP facility were not adequate such as the maps which were too small and the lack of resource phone lists. This has been identified in previous activations of the JeffCo ICP. RFFO ERO Training and Response Aids discussed in Section 8 below contains corrective actions directed at correcting these problems.

## **8. RFFO Proposed Corrective Actions**

The following corrective actions are planned or proposed to address the READY-94 performance issues clearly within RFFO control. The RFFO corrective actions are primarily the responsibility of RFFO Nuclear Safety and Emergency Preparedness Division (NSEPD) and have been submitted for commitment tracking and management.



### Additional Drills

RFFO will observe and evaluate the effectiveness of contractor corrective actions in a series of drills planned by the contractor starting the first part of May. EG&G has recommended that the scenario used for READY-94 will be played as a table-top drill with the players being walked through any response activities with inappropriate reposes and Integrating Management Contractor (IMC) ERO personnel observing. A Site Drill will then be performed with actual field response to verify EG&G-implemented corrective actions and provide additional information to define or implement corrective actions. These will also be observed and evaluated by RFFO.

A second Site Drill will be performed with the IMC ERO personnel performing the response. The second Site Drill will use objectives developed by RFFO and will serve as the performance measure to determine if the IMC is ready to take over the EOC response function on July 1, 1995.

### Critique Process

The critique process should include all response participants to the degree possible. RFFO evaluators will brief the DOE Manager immediately following the critique if a representative from the Manager's Office did not attend the critique. The benefit of this will be that players will more clearly see the effect of their actions in the emergency response process. All RFFO ERO members will be provided copy of items discussed in the critique by RFFO NSEPD. This will allow for all ERO members to correct or improve response actions if called to respond prior to issuing a detailed and validated report. RFFO will include critiques as part of the evaluation process. (Responsible manager P. McEahren.)

### Drill and Exercise Objective and Evaluation Criteria Identification

RFFO will identify the objectives and evaluation criteria and the type of scenario to be developed for all graded drills and exercises. Objectives and evaluation criteria will be provided to the contractor for quarterly Site drills, an annual full participation exercise, and several building drills. The contractor would then develop scenarios to demonstrate these objectives. The objectives and criteria selected would:

- be based on the hazards and planned activities for the building/Site,
- provide a performance-based method for assuring readiness to perform activities,
- provide a performance-based method for addressing RFFO concerns regarding safety and response issues,
- test the effectiveness of corrective actions implemented by the contractor and RFFO, and
- be able to be objectively assessed.

A regular "Drill Day" will be negotiated with the IMC to facilitate additional drilling and training.

### RFFO Evaluation of Drills and Exercises

RFFO will perform the formal evaluation of the contractor and RFFO response to drills and exercises. This will assure critical assessment of RFETS response. RFFO evaluation will clearly provide a performance-based method for evaluating contractor development of safety and emergency related plans and procedures as well as training.

### RFFO ERO Training and Response Aids

An Incident Command/Incident Management System course is recommended for all EOC personnel. The benefit to this will be to provide all RFFO personnel with a common basis for incident management. This is important since currently the RFFO ERO members have varying backgrounds and experience regarding incident management and emergency

response contributing to differing expectations of the RFFO role during emergency response. This type of course is available from multiple sources with varying content. An issue paper discussing cost and benefits of the available options will be developed by NSEP and provided to the Office of Training and Development (OTD).

A survey will be developed and issued to identify RFFO ERO individual member training needs and resources and response aids that should be available during a response. For OCC personnel, this will include TRAC training. RFFO personnel responding offsite need resource lists containing lines of communication for response and policy related issues and for obtaining technical information. NSEPD will assist OTD with identification of response and training needs for RFFO ERO members. The organization to provide the response aids will be determined based on the needs identified.

The DOE OCC Manager should be provided a technical assistant(s) familiar with overall emergency operations, dose assessment, health risk and risk communication. NSEPD will raise this issue to management and develop a position description in cooperation with Communications (see JPIC Activities below).

#### JPIC Activities

RFFO NSEP will assist Public Information personnel in developing or updating media briefing packets directed toward providing answers to the common questions regarding emergency response, relative risk etc. Broad based training that could be provided for new RFFO Public Information personnel on all response functions that have an offsite interface including medical will be discussed with the Public Information personnel. The technical assistant supporting the OCC Manager would also support RFETS Public Information personnel during an event.

The information flow into and out of the JPIC will be reviewed with the State, NSEP, and the Public Information personnel responding both to the SEOC and at the RFETS EOC to identify ways to streamline the process and minimize bottlenecks currently preventing the timely release of information. The process in the EOC for approving information for release will also be reviewed to identify bottle necks and streamlining options. A white paper is currently in process to evaluate the feasibility of using the Emergency Information System to facilitate information flow from the RFETS EOC to the SEOC/JPIC.

Implementation of these planned and proposed corrective actions will ensure RFFO ERO members respond with the resources and training needed to perform their functions as required and interface with the contractor ERO and offsite agencies effectively. These corrective actions will also provide a performance-based method for RFFO to ensure the continued effectiveness of the RFETS emergency management program.

## **Appendix A**

### **Emergency Management Guide Criteria Evaluation**



## **Appendix A**

### **Emergency Management Guide Criteria Evaluation**

RFFO observed response activities in the Emergency Operations Center (CMT and HAC), the State Emergency Operations Center (OCC and JPIC), on-site medical response, on-scene Incident Command, other on-scene responders, JeffCo Incident Command Post, and Field Sampling Team A. Results of the evaluation by RFFO of the standards and criteria contained in the EMG are contained in this appendix. Detail regarding the response is not usually provided for criteria that were satisfactorily demonstrated. At least one example where unsatisfactory response was observed is provided for criteria not satisfactorily demonstrated. An evaluation of the overall standard is provided based on the evaluation of the supporting criteria.

#### **A. Emergency Response Organization**

**STANDARD: Emergency Response Organization-** An emergency response organization, with clearly specified authorities and responsibilities for emergency response and mitigation, is established and maintained for each facility. The emergency response organization has overall responsibility for the initial and ongoing response to, and mitigation of an emergency.

The planning and response to READY-94 were unsatisfactory regarding meeting this standard and its associated criteria.

**A.1. A single individual is in charge of the overall response and has the authority to use necessary resources to mitigate the emergency.**

This was not demonstrated. The on-scene IC had limited control of the field resources. The CM assumed command of the incident and did not provide accountability or control of on-scene activities. For example, the EOC directed a bulldozer to the scene without coordinating with the IC. Other resources requested by the IC through the EOC were either delayed or did not arrive (tow truck, electrical poles).

**A.2. The lead individual responsible for the emergency response demonstrates sufficient knowledge of the effected facility and it's operations, the emergency response team and it's mission, and the available resources necessary to effect an appropriate response and mitigation of the emergency event.**

This was demonstrated on-scene. The on-scene personnel were aware of the resources available and the Fire Department and the IC were knowledgeable regarding the facility, hazards, potential solutions and anticipated problems to be encountered.

**A.3. Each member of the emergency response organization effectively demonstrates their roles and functions, and use of emergency equipment/facilities, as outlined in the approved emergency plan and procedures.**

This was not demonstrated. The personnel at the State Emergency Operations Center (SEOC) and Joint Public Information Center (JPIC) were not aware of the information resources located at the SEOC facility. They were not aware either of the personnel they could contact to provide information. This is both a training and procedural problem (Public Information does not have a current plan or set of procedures).

The IC did not make use of the facilities equipment or information resources available for the ICO. Equipment to identify the Incident Command Post, to control access to the scene, and personnel protective equipment (PPE) are all available in the Shift Superintendent's (IC's) vehicle but were not used.

**A.4. A succession list of management personnel responsible for managing the emergency in the absence of the primarily designated emergency manager is documented and implemented as appropriate.**

This was not demonstrated. Due to the pre-announcement of the exercise and the notification of the EOC Team 1 to ensure availability for the pre-drills and this exercise, the implementation of this criterion could not be verified.

**A.5. Management of the emergency response facility provide for the collection and dissemination of accurate data, setting priorities, assigning work to functional groups, and keeping key emergency response staff abreast of emergency response status.**

This was not demonstrated during this response or in past drills and exercises. The EOC did not disseminate information back down to the on-scene command location in a timely manner. This places the responders in a potential position of extreme exposure and possible life safety hazard.

The frequency of information flow from the CMT to the SEOC regarding status of the response was improved during READY-94 over the previous two drills. However, the communications were not effective. The information provided did not give a clear picture of the incident and the OCC Manager did not ask the right questions to get clarification.

Status information within the EOC itself was improved over the previous two drills.

**A.6. Transfer of any command and control function (e.g., emergency class level designation or notification) to another emergency facility (e.g., TSC to EOF), or within an emergency facility, is completed in a formal manner. The emergency response organization is aware of the transfer.**

This was not demonstrated. The transfer of command once the EOC was activated was not conducted in a clear and positive manner. The CM did receive a briefing from the IC and did assume command however, this was not clearly conveyed to all responders. The SS did assume the IC position, but the field responders did not know where the Command Post was located initially and could not make contact easily.

**A.7. Control of operations, monitoring, and repair teams is clearly vested in either a single emergency facility or clearly defined between multiple emergency facilities.**

This was not demonstrated and is a recurring problem. The on-scene IC performed appropriately within an Incident Command Organization. The EOC should support them as requested. However, the EOC assumed command and did not disseminate information in a timely manner. This led to multiple efforts for similar tasks and can lead to potential additional exposure and ineffective use of resources.

**A.8. All hazards monitoring teams (i.e., onsite teams, laboratory personnel, offsite teams, state and local teams, a Radiological Assistance Team (RAT) , and the**

**Federal Radiological Monitoring and Assessment Center Team (FRMAC) ), and their data are coordinated.**

The data obtained by the radiological monitoring teams were well coordinated with the exception of chemical (IH) information. The need for IH to be coordinated in the overall response to emergencies at RFETS is a recurring problem and has not been addressed. The option of incorporating the HAZMAT team and the equipment readily available into the planned response has not occurred though it has been supported by RFFO.

## **B. Offsite Response Interfaces**

**STANDARD: Offsite Response Interfaces- Effective interface and coordination with Federal, state, tribal, and local agencies and organizations responsible for offsite emergency response and for protection of the environment and health and safety of the public are demonstrated.**

This standard was met through demonstration of offsite interfaces with the SEOC, JeffCo ICP, medical organizations and the County Medical Examiner. Offsite security and fire fighting interfaces were not required for this scenario.

**B.1. Pre-designated offsite points of contact (POCs), including organization, names, and telephones numbers are established and available to the emergency response members.**

This was demonstrated during READY-94 for medical and the County Medical Examiner and the SEOC. As noted above fire fighting and security interfaces were not required. Since this area has been identified as a concern in the past, future exercises will include exercise objectives to demonstrate fire fighting and security MOUs.

**B.2. Necessary letters of agreement, memorandums of understanding (MOU), plans and other arrangements between the emergency response organization and Federal, state, tribal, and local agencies (e.g., hospitals and fire departments) are accessible and utilized by the emergency response members.**

This was successfully demonstrated.

**B.3. Information exchange between the emergency response organization and offsite officials is demonstrated by:**

**Clear communications and mutual understanding of acronyms, code words, conventions, and/or technical terminology; and  
Successful identification and exchange of all information necessary to carry out an integrated response. Information given offsite is correct and timely.**

This was not demonstrated. The frequency of information flow from the Deputy DOE Manager to the OCC Manager was improved, see A.5. However, READY-94 had the JeffCo ICP as an added information dissemination point. The information flow did not occur as described in procedures. This resulted in unnecessary briefings by the Deputy Manager in the EOC and resulting in information going into the SEOC from multiple outside sources. All these sources had received their information from the EOC but at different times. Since the information from the EOC was always being updated there was often confusion in the SEOC and JPIC as to what was current confirmed information.

**B.4. Telephone circuits and/or radio channels are available and allow for effective communication with offsite officials, the cognizant DOE Field Element, and the HQ program EMT, provisions for backup communications exist and are utilized, if necessary.**

This was not demonstrated. There are several commercial telephone lines that bypass all RFETS EOC communications circuits. However, when the EOC phone lines went down as the scenario required communications were lost with both the offsite ICP and SEOC.

**B.5. Incoming interfaces/inquiries are directed to the proper persons.**

This was not demonstrated. Although no incoming calls from outside organizations were handled improperly, calls from the DOE Representative at the JeffCo ICP were allowed to go through to the Deputy Manager on the CMT. Procedurally, the DOE Representative at the JeffCo ICP should be communicating with the OCC Manager only to obtain information regarding the incident.

**B.6. Calls are evaluated to determine source, credibility, and reliability (e.g., through name recognition or code words).**

This criteria was not evaluated.

**B.7. Interface with offsite political, technical, security (e.g., local law enforcement) and emergency services officials are accomplished by an individual(s) with the appropriate responsibility, authority, knowledge and training.**

Offsite interfaces occurred but this aspect of the interface was not evaluated.

**B.8. Appropriate offsite services (e.g., LLEA, fire and medical) as indicated in pre-arranged, signed agreements, are integrated to augment onsite resources.**

This was demonstrated. Medical and the County Medical Examiner agreements were exercised.

**B.9. Offsite officials are informed of the availability of applicable DOE national assets (RAP, FRMAC, ARAC, and REAC/TS). DOE national assets are utilized as appropriate.**

Not required for this scenario.

**B.10. Unique offsite organizations, depending on site specific geography, transportation routes, ecology, and demographics are coordinated with for special needs, as outlined in plans and procedures.**

The scenario as designed did not have any form of offsite impact and therefore this was not required to be demonstrated.

## **C. Determination of Event Class**

**STANDARD: Determination of Emergency Event Class- The determination of the appropriate class of operational emergency is made accurately and promptly.**



This standard was adequately demonstrated by the Incident Commander during on-scene assessment.

**C.1. Facility staff and emergency response personnel use an approved procedure, supported by an approved Emergency Action Level (EAL) criteria scheme, for determining the emergency class.**

The response adequately demonstrated this criterion.

**C.2. Emergency response personnel demonstrate an understanding of the EAL scheme and appropriate implementation actions.**

The response adequately demonstrated this criterion.

**C.3. Responsibility for making emergency class determination is clearly defined and assigned within procedures, and the designated individual makes the determination(s).**

The response adequately demonstrated this criterion.

**C.4. Class of emergency is determined as soon as practical.**

The response adequately demonstrated this criterion.

**C.5. Emergency conditions are continuously monitored for changes which would require upgrading the emergency class or terminating the emergency and entering recovery.**

The response adequately demonstrated this criterion in the HAC.

## **D. Notifications and Communications**

**STANDARD: Notifications and Communications- Events categorized as operational emergencies are reported within the required time to the appropriate organizations. Appropriate follow-up notifications are made.**

This standard was adequately demonstrated.

**D.1. Appropriate initial notifications to DOE HQ and offsite authorities for operational emergencies are made as soon as crucial information is available for categorization, but no later than fifteen minutes after categorization of the event.**

This was adequately demonstrated.

**D.2. The formally established reporting and notification chain is properly followed, including communications to and among:**

**Facility operators/staff to Facility Manager (Contractor Management),  
Facility Manager to DOE Facility Representatives (e.g., Field/Area Office),  
HQ EOC,  
HQ Program Manger,  
Local, Tribal, and State offsite authorities, and  
Facility Emergency Response Personnel (e.g., Off hours calls to facility staff).**

This was adequately demonstrated to the degree required and possible since not all organizations listed above participated. Off-hours calls were not required.

**D.3. Items 1-18 of the Notification Report found in DOE 5000.3A, Attachment II, are completed in accordance with established procedures. Items 1-18 are: Occurrence Report Number, Report Type and Date, Occurrence Category, Division or Project, DOE Program Office, Facility, System, Building or Equipment, UCNI, Plant area, Date and Time Occurrence was Discovered, Date and Time Occurrence was Categorized, Date and Time of DOE Program Notification, Other Notifications, Subject or Title of Occurrence, Nature of Occurrence, Operating Conditions Of Facility at Time of Occurrence, Activity Category, Immediate Actions Taken and Results.**

This criterion was not evaluated.

**D.4. The emergency manager or designee personally approves the release of notification information (e.g., by reviewing and signing the Notification Form prior to transmittal).**

This criterion was demonstrated per procedure.

**D.5. Proper accurate and timely follow-up notifications are made when conditions change, or when the emergency class is upgraded or downgraded. HQ EOC is notified of all changes in the emergency class within fifteen minutes of the re designation.**

The response adequately demonstrated this criterion.

**D.6. A pre-arranged and standardized content and format is used for the initial and follow-up notification.**

The response adequately demonstrated this criterion.

**D.7. Classified information is handled in accordance with established DOE requirements.**

This was not evaluated.

**D.8. Installed communication systems are adequate to accomplish the notification process.**

The response adequately demonstrated this criterion.

**D.9. Notifications are properly documented and displayed in the appropriate emergency facilities (e.g., EOC, TSC, and EOF).**

The response adequately demonstrated this criterion.

## **E. Consequence Assessment**

**STANDARD: Consequence Assessment- Actual or potential onsite and offsite consequences of an emergency are adequately assessed.**

This standard was not demonstrated.

## **E.1. General Criteria**

**E.1.1 Initial assessment of the consequences of an emergency is made in a conservative and timely manner. In-depth assessment of events is made continuously throughout the emergency. Data used for assessments is verified for accuracy.**

This was not demonstrated. Additional information about reporting the potential damage to other facilities was interjected by the controllers over the LS/DW as the assessment process was not being given attention from the on-scene Incident Command.

Some data used by the HAC for consequence projections particularly weather information was verified and updated throughout the response. Analysis using accurate source term data was slow.

**E.1.2. The consequence assessment process is integrated with the process for categorizing as an emergency, and determining the appropriate emergency class, protective action decision-making, projections of onsite and offsite consequences, and the ability to locate and recover materials.**

This was partially demonstrated. The HAC Manager was consulted regarding confirmation of PA and PAR decisions but PAs and PARs should be discussed with other HAC personnel as well and were not.

**E.1.3. Information concerning facility system status, monitoring and sample results, source term assumptions, and meteorological trends is assessed and integrated in order to estimate the degree of onsite and offsite impact.**

This was the process followed in the HAC.

**E.1.4. The following parameters are considered in developing the Protective Action Recommendations (PARs):**

- Current and projected plant or process status,**
- Current dose assessment and dose projection,**
- Expected duration of release,**
- Evacuation time estimates, Local sheltering efficiencies,**
- Effect of current and projected meteorological conditions on roads,**
- Local geography and demographics, and**
- Time of day.**

This was demonstrated to the extent applicable and planned for in the scenario. Evacuation time estimates and the elements affecting those estimates (geography, demographics and time of day) were not applicable since evacuation was not necessary given the scenario. Sheltering efficiencies would have to be considered minimal since so many personnel did not follow the requirements. It is not known if administration buildings that may be in a plume pathway can or would know how to shutoff ventilation systems. (This will be included in future scenarios.) The HAC used all other factors in recommending and verifying PAs and PARs.

**E.1.5. Monitoring and evaluation are performed for specific indicators necessary to continually assess the consequences of emergency events and monitor safety, health, environmental, and security conditions which may effect the emergency.**

This was partially demonstrated. Appropriate monitoring was performed by the FSTs and the HAC made use of this information in the continuing consequence assessment. However, monitoring of onsite emergency facilities such as the IC Post for continued safety was not performed.

**E.1.6. Assessments are updated when there are actual and projected changes to facility status, release, or meteorological conditions.**

Updates to consequence assessments were made in the HAC as conditions changed.

**E.1.7. Coordination is made with Federal, state, tribal, and local organizations to:**  
**Estimate the integrated impact of release on the public and environment;**  
**Provide meaningful assessment information;**  
**Locate and track hazardous materials released to the environment; and**  
**Locate and recover materials, especially those with national security implications.**

This was not demonstrated. Neither hazardous nor security related materials were part of the scenario. The mechanism to provide meaningful assessment information to the State is the TRAC screens on-line in the SEOC. However, this was not effective since neither the State nor the OCC Manager could interpret the screens. No information was provided regarding conversions used to model enriched uranium rather than plutonium with TRAC.

**E.1.8. Assessments and analyses are clearly communicated to emergency management decision-makers.**

This was not demonstrated. As noted above the mechanism for communicating this information to the State is the TRAC screens and since no one at the SEOC could interpret the screens, the assessment and analyses were not communicated to the offsite decision makers. Initially the screens were not updated. The rationale for recommending no offsite actions was not provided to the SEOC and should have been since the initial screens at the SEOC indicated offsite PARs should be made (see E.2.7).

## **E.2. Dose Assessment Criteria**

**E.2.1. Adequate methods, systems, staff and equipment are available for determining the type(s) of hazard(s) and source term of releases of radioactive or non-radiological hazardous materials based on facility system parameters and effluent monitors. Sampling and monitoring activities are used to refine the source term and projected doses.**

These type of methods were not applicable to the scenario.

**E.2.2. In the absence of actual data, methods exist to estimate a source term for use in making dose projections.**

This was demonstrated by the response though not in a timely manner.

**E.2.3. The dose assessment team is capable of using technical operational data (facility process information) to make dose projections.**

This was partially demonstrated. Only a single HAC member was able to do this and other HAC members did not assist with validation of information etc.

**E.2.4. Dose assessments, performed by hand and/or computer based calculations, are performed in a timely manner.**

This was not demonstrated. The personnel performing the assessments in the HAC experienced much confusion and uncertainty regarding how to handle the situation when it became known that the source term was not plutonium.

**E.2.5. Adequate meteorological information (current and forecast) is available to appropriately characterize onsite atmospheric diffusion and transport conditions throughout the area of interest for use in the dose projection effort.**

This was demonstrated.

**E.2.6. Field monitoring is coordinated such that field data can be used to verify and update dose assessments.**

Field monitoring for radiological concerns was coordinated in the HAC. The chemical hazard monitoring portion of the FST was not demonstrated.

**E.2.7. The results of dose assessments and projections are displayed (e.g., on an EPZ map) and are conservatively used in developing protective action recommendations.**

This was not demonstrated. Assessment results were appropriately displayed. PARs were not conservatively determined. Initial notification of the SEOC was that no offsite actions were required even though initial information from the computer modeling indicated 1.4 rem at the site boundary (indicating offsite actions may be required). Rather than providing that information, the recommendation was made not to recommend offsite actions since the data was 'known' by the HAC Manager to be conservative.

**E.2.8. Radiological and toxic chemical dose projection are made for the inhalation and ingestion pathways. Calculations are made using release rate data, field monitoring data, physical barrier status, and meteorological data. (The methods should utilize a combination of computer systems, hand calculations, and meteorological systems and information). The projections are shared with offsite authorities.**

This was partially demonstrated. The results of calculations were provided but the back up information was not forwarded to the SEOC.

**E.2.9. Models and systems used to perform dose assessment are consistent with models used by offsite authorities. Major differences are understood by all parties.**

This was not demonstrated. Problems were encountered with using TRAC for the scenario's source term, therefore, initial dose projections were made using a backup code and that information was not provided to the SEOC. Also, due to the problems with the SEOC personnel not being able to use the information from TRAC the subsequent dose assessment information can not be considered to have been understood by all parties.

The State wishes to perform independent modeling during response and this was never achieved.

## **F. Protective Actions**

**STANDARD: Protective Actions- Specific, predetermined actions are taken in response to emergency conditions to protect onsite personnel and the public.**

This standard was not demonstrated.

### **F.1. General Criteria:**

**F.1.1. Applicable Protective Action Guides (PAGs) and Emergency Response Planning Guidelines (ERPGs), are utilized in protective action decision making.**

This was not demonstrated. PAGs were discussed but since the initial calculations were considered conservative, they were not followed when making PARs.

**F.1.2. Protective action recommendations, such as sheltering and/or evacuation, for affected offsite and onsite areas are made in a conservative and timely manner to appropriate authorities/organizations.**

This was not demonstrated. Onsite recommendations were not made immediately by the Incident Commander. Onsite PAs were not provided to the Site personnel until after the EOC was activated and the LS/DW announcement was drafted by Public Information staff and approved by the CMT. Recommendations regarding offsite actions were timely however not conservative as noted in evaluation of E.2.7 above.

**F.1.3. The emergency response organization confirms that appropriate offsite authorities (i.e., Federal, state, tribal, and local) and onsite organizations/facilities (security, etc.) are aware of the protective action recommendations.**

This was demonstrated.

**F.1.4. The emergency response organization monitors the protective actions offsite/onsite authorities/organizations are implementing.**

The response by offsite officials did not require this to occur since the State followed the recommendation of no offsite protective actions.

**F.1.5. The emergency response organization notifies the DOE Headquarters EOC of offsite and onsite protective action recommendations made and actions implemented.**

This was demonstrated.

**F.1.6. The emergency response organization, as required, formulates and communicates to appropriate offsite authorities ingestion pathway protective action recommendations.**

Not required by the scenario.

## **F.2. Accountability Criteria:**

**F.2.1. Accountability of all facility personnel is completed within 30 minutes (not to exceed 45 minutes) of emergency determination, with all personnel positively identified by name and either (1) their location established or (2) those not located identified as missing for purposes of search and rescue.**

The scenario involved unoccupied buildings with no accountability mechanism per RFETS procedure. Therefore, this criterion was not evaluated. However, as noted below, locating the last fatality did exceed the time limits for accountability. This issue should be evaluated further.

**F.2.2. A search and rescue operation is promptly initiated for missing personnel.**

This was not demonstrated. Even though no personnel were known to be missing, a thorough immediate damage assessment was not completed on-scene, and one of the buildings that sustained damage was not immediately identified and the casualty not found in a timely manner.

**F.2.3. Affected personnel (i.e., on-site or facility personnel) are continuously accounted for during the emergency response.**

The facilities receiving most significant damage were facilities which are not normally occupied and therefore did not require accountability with the exception of PACS 1 which had a Security Guard. ICO personnel kept in touch with this individual during the response.

On-site personnel were not continuously accounted as evidenced by the fact that personnel went in and out of buildings (including those near the incident) even though they had been instructed to shelter in place.

## **F.3. Evacuation/Sheltering Criteria:**

**F.3.1 Facility personnel are evacuated in a timely manner. The ability to evacuate individuals is demonstrated by:**

- Use of specified evacuation routes, and
- Use of marked, pre-designated assembly areas.

This scenario did not require Site or facility evacuation.

**F.3.2. Organizational ability and resources necessary to control traffic evacuation flow and control access to evacuated and assembly areas are demonstrated.**

This scenario did not require Site or facility evacuation.

**(F.3.3. EMG does not contain an item with this number)**

**F.3.4. Controls, records, and monitoring stations are established for onsite personnel exposed to radiological and other hazardous material.**

A decontamination and monitoring facility was designated. Controls and records used were not evaluated.

**F.3.5. Habitability of onsite facilities, including emergency facilities, is periodically determined using dosimetry and survey instruments, and personnel are evacuated or relocated if necessary.**

This was not demonstrated. Habitability surveys of the Incident Command Post did not occur even though the Command Post was located downwind from the scene.

**F.3.6. Procedures, emergency facilities, equipment, and personnel for contamination control, decontamination, and registration of evacuees are effectively demonstrated.**

Sheltering in place as a contamination control method was not effectively demonstrated. The operations at the decontamination facility were not observed.

**F.3.6.1 Pre-designated assembly areas are used for personnel monitoring and decontamination.**

This was not demonstrated. This was not performed uniformly even for personnel leaving the incident area.

**F.3.6.2. Procedures for recording names of individuals surveyed, the extent of any contamination found, the instruments used and the methods employed, and results of any decontamination efforts are available and used.**

This was not demonstrated on-scene. A decontamination facility was established but activities were not evaluated.

**F.3.6.3 Qualified personnel perform monitoring and decontamination operations.**

This was partially demonstrated. Monitoring and contamination did not occur until after the RCTs arrived on-scene and no attempts to perform monitoring of individuals that had been on-scene prior to the RCTs was performed.

**F.3.6.4. The contamination level that requires decontamination is specified.**

Not evaluated.

**F.3.6.5. Decontamination methods are included in procedures for various levels and types of contamination (e.g., skin contamination, and nasal swipes), and are used appropriately.**

Decontamination occurred on-scene, at an additional facility, and at OM. Only the activities at OM were evaluated. RCT support at OM did perform these activities.

**F.3.6.6. Contaminated individuals are scheduled for appropriate follow-up actions (e.g., subsequent whole body counts and/or bio-assays).**

Not evaluated.



## **G. Public Information**

**STANDARD:** An emergency public information program, consistent with DOE 5500.4 is demonstrated and integrated into the facility emergency management program.

This standard was not met. In general, the performance of the response in this area was significantly improved over READY-93.

The Joint Public Information Center is operated by the State and supported by RFETS. Resolution of most of the issues regarding public information will require coordination and cooperation with the State.

**G.1. Authority for approving media releases is demonstrated to be vested in a single individual or designee.**

This was not demonstrated. Rocky Flats emergency media releases are to be released from the Joint Public Information Center (JPIC) and require multiple Site EOC approval as well as agreement by all major JPIC players. This is a factor in the inadequate demonstration of other criteria.

**G.2. Information released to the news media regarding the emergency is accurate, timely, and relevant.**

This was not adequately demonstrated. There was much agonizing in the JPIC over "confirmed" information which caused significant delays in providing information to the media (one of the two briefings occurred over 20 minutes late). One of the significant contributors to this problem was that the flow of information regarding all aspects of the emergency were from multiple points into the JPIC. Since the staff in the JPIC are new to emergency response have not been provided training regarding emergency response and procedures, they were not able to sift through the incoming information and easily identify the information appropriate for release.

**G.3. Information released to the news media is coordinated with DOE, and other Federal, state, tribal, and local response organizations, as appropriate.**

This was not demonstrated. Information released did not get reviewed by the EOC.

**G.4. A designated spokesperson and support staff are available to assess emergency information and exchange information with representatives of Federal, state, tribal, and local organizations and the media.**

A designated spokesperson and support staff were provided. The ability to assess information was not demonstrated.

**G.5. Adequate emergency facilities, staff, and communications equipment are available and activated in a timely manner to manage public inquiries and rumor control (e.g., Joint Information Center (JIC), Joint Public Information Center (JPIC)). Accurate information disclaiming rumors is incorporated in future media briefings and releases.**

Adequate facilities were provided. Information released was not timely or accurate. A Technical Spokesperson or use of technical staff via telephone was needed. Additional

practice is needed with the State to identify other resources needed and to work out how media briefings are to be handled.

**G.6. Access of the news media to the site, affected facility and site/facility personnel is controlled.**

This was demonstrated at the SEOC and JPIC.

**G.7. Technical briefers are effectively utilized and are trained to deal with the media.**

This was not demonstrated. Technical briefers were not provided.

**H. Emergency Response Staff Activities**

**STANDARD: The emergency response organization responds to emergencies in an effective and timely manner to mitigate the consequences and bring the emergency situation under control. The specific indicators necessary to continually assess the consequences of emergency events and to monitor safety, health, and the environmental and security conditions which may affect or exacerbate the emergency are monitored and evaluated by the emergency response organization.**

This standard was not demonstrated

**H.1. Staffing and Activation of Emergency Facilities and Teams Criteria**

**H.1.1. The emergency facilities and teams are staffed with emergency response personnel (designated by name, title, or position) in accordance with the approved emergency plan.**

This was demonstrated.

**H.1.2. The emergency response organization is functionally staffed to address the occurrence in a timely manner, as outlined in the approved emergency plan. Key emergency facilities, should be staffed within an hour after declaration of an emergency.**

This was demonstrated.

**H.1.3. Procedures and/or checklists which describe the major activation and response activities of key members of the emergency response organization are utilized.**

This was not demonstrated. Use of procedures was not done uniformly. Many of the problems identified on-scene and elsewhere would have been eliminated if appropriate checklists had been used. This is particularly true of the on-scene Incident Command related problems.

**H.1.4. Emergency response staff demonstrate knowledge of the tasks they are expected to perform.**

This was not demonstrated uniformly throughout the ERO.

**H.1.5. Provisions are made for extended operations (i.e., shift arrangements to cover a 24-hour operations).**

This was not (and has not been in recent years) demonstrated.

**H.1.6. Emergency facility and team activation meet requirements of the approved emergency plan(s).**

This was not demonstrated. Since the date of the exercise was announced to Team 1 with instructions to assure availability, it is not known if the minimum correct mix of ERO personnel would respond in an unexpected situation.

**H.1.6.1. Communications systems used to activate both onshift and offshift augmentation emergency response personnel are adequate and reliable. Emergency response personnel are notified in the required time period.**

This was not demonstrated for ERO personnel with the exception of the Fire Department which actually did initiate an off shift call back for availability. The equipment and procedures as used by the FD were adequate.

**H.1.6.2. Emergency responders use a method to authenticate call-in notification. Methods may include code words, call backs, restricted access communication networks, or other administrative or hardware controls.**

This was not demonstrated.

**H.1.7. Minimum required staffing (as documented in approved plans and procedures) is available and assumes responsibilities for emergency response functions prior to emergency facilities and teams being declared activated.**

This was demonstrated.

**H.1.8. A method (e.g., status board and badges) for tracking presence of key members of the emergency response organization is pre-established and followed.**

This was demonstrated.

## **H.2. Emergency Response Staff Functions Criteria**

**H.2.1. Information is accurately transmitted in an orderly and documented manner throughout the chain of command and between emergency facilities. Mutual understanding exists of acronyms, code words, convention and/or technical terminology. Event logs are accurately maintained at each emergency facility.**

This was not demonstrated. Chain of command was not followed. The IC was by passed and left without critical information to protect the responders in the field. Information about facility status and field sampling was never passed on through the EOC to the on scene command and this hampered the efforts of the incident commander. SEOC personnel do not understand much of the technical terminology.

Event logs were not reviewed.

**H.2.2. The emergency response staff is briefed periodically on the status of the emergency and current significant response priorities and activities.**

This was demonstrated. The Incident Commander did hold briefings with the personnel at the command post to gather and disseminate information. Briefings occurred in the EOC, HAC, and JPIC as well.

**H. 2.3. When priority actions are identified, tasking is clearly made to emergency response staff, and actions are followed through to completion.**

This was not demonstrated. The EOC took command of some operations but not others. The EOC could not get a tow truck to the scene and eventually gave up.

**H.2.4. Specialty groups supporting the emergency response staff are functionally organized, and properly managed to provide timely information to the decision making process.**

This was not demonstrated. The on-scene immediate support of the RCTs was non-existent. This caused additional efforts to be hampered because RCT support outside of a facility "procedurally" goes through the EOC only and leaves the first responders without vital information to protect themselves. This is a reoccurring problem identified for each of the past three years. The same is true of Industrial Hygiene support.

**H.2.5. Emergency response staff are knowledgeable of appropriate response resources, capabilities, and how to access them (e.g., personnel, equipment, consumable, and replacement parts).**

This was not demonstrated by all ERO elements. The IC was capable and knowledgeable of the resources available both on and off site. In most cases, when the IC made a call directly via phone or radio they received immediate support (in one case the request was not supported because the request did not come from the EOC). Requests for support made through the EOC were lost or were significantly delayed. The efforts of the actual responders and the IC were hampered when requested resources did not arrive in a timely manner. This was the third consecutive drill/exercise to demonstrate that the EOC does not function as planned and documented by procedure.

This was not demonstrated in the SEOC or JPIC either. The personnel in these locations were not aware of documentation (media briefing packets, plans, and procedures) available at the facility nor how (or even that they could) tap into the resources onsite.

**H.2.6. Emergency response staff analysis of information is sufficient to preclude overwhelming facility management with unnecessary information.**

Crisis Management overwhelmed the emergency responders with requests for non-vital information. The responders were too busy reacting to management requests for detail to protect themselves and the public and mitigate the incident. The CMT and CST personnel appear to have lost sight of their principal mission to support the IC.

**H.2.7. The emergency response staff functions in an efficient, effective, and timely manner in support of the crisis resolution.**

This was not demonstrated. See H.2.5 regarding EOC support to the IC.

**H.2.8. The emergency response staff provides current status briefings on the emergency to all appropriate senior officials.**

The ERO team directed to respond to this scenario is for the most part composed of the Site senior officials. Therefore, briefings were not required except to Headquarters.

**H.2.8.1. Adequate data are obtained and analyzed to support the operations staff in assessing and mitigating the emergency events.**

See 2.8.2.

**H.2.8.2. The staff demonstrates adequate knowledge in emergency procedures, and knowledge of facility or process systems to allow timely analysis of facility conditions.**

This was not demonstrated by the EOC personnel. Consideration was not given to the time required to address on-scene concerns and provide facility assessments. This resulted in the EOC directing power to be restored to an area prior to determination of the extent of facility damage to the buildings in the area.

**H.2.9. Analysis of facility conditions leads to implementation of proper corrective actions.**

The actions demonstrated were by luck and not by coordination of resources. The lack of chain of command and no defined paths of communication or lines of authority hampered the responders efforts on-scene. Direction came from both the field and the EOC and at times conflicted.

**H.2.9.1. The correct emergency operating procedures are utilized by the operations and technical support staff.**

This was not demonstrated. The Incident Commander used a notepad and stated that the procedures were too cumbersome and unfriendly for use resulting in repeating many previously observed problems such as lack of Command Post identification, lack of scene access control, no designation of a staging area or staging manager -- all these items are contained in checklists in the Incident Command procedure.

**H.2.9.2. Given the facts of the situation at the time, operations and technical support staff determine and implement a reasonable, well-planned course of action.**

Based upon the information that was actually passed through to the on-scene Command Post, the actions taken and planned were well coordinated and appropriate. The fact that information channeled away from the IC and went on to the EOC may have resulted in injured personnel. There was no comprehensive facility impact assessment. Restoring electrical power to facilities as directed by the EOC would likely have initiated several other incidents requiring response.

**H.2.10. Information exchange, the decision making process, and implementation actions are adequate to ensure the success of corrective actions.**

Coordination and information exchange were not effective between the EOC and on-scene personnel to ensure success of corrective actions. See H.2.9.2 above and H.3.1 below as examples.

**H.2.11. Emergency facilities are adequately stocked with the necessary drawings, reference material, procedures, and other "tools" for use by those performing analysis.**

The HAC is appropriately stocked and is the only facility performing analysis. The OCC (both the SEOC and JeffCo ICP locations) and the JPIC are not appropriately stocked with reference materials. Some EOC personnel in the CST have indicated the need for additional references as well.

**H.3. Coordination of Operations, Monitoring, and Repair teams criteria.**

**H.3.1. Management attention and control are applied to task priority team membership, deployment, preparation, and safety considerations for all in-plant and field teams.**

This was not demonstrated as shown by dispatching FSTs with no Industrial Hygiene support and the HAC Manager instructing a bulldozer operator to enter the scene without the respiratory protection known to be required.

**H.3.2 Field teams are provided adequate briefings before being deployed. These briefings include:**

- Operations to be performed, authorizations required,
- Radiological, non radiological and thermal hazards expected,
- Exposure limits (e.g., Turn back limits)
- Protective equipment required,
- System and general arrangement drawings, maps, procedures checklists,
- Tools and supplies required,
- Communications protocol, and
- Use of training mock ups (if available) to assist in keeping exposures As Low As Reasonably Achievable.

Inadequate PPE was demonstrated by several plant support groups such as those dispatched to address electrical problems and there was no coordination of activities including decontamination for these same support teams.

**H.3.3. Team priorities are set in a coordinated manner (e.g., which repair or survey efforts should be accomplished first).**

This was not demonstrated as the EOC and the on-scene Command had two sets of priorities that were never coordinated. EOC dispatched teams (e.g. bulldozer) without coordinating with the IC. IC requests (electrical poles and tow truck) made through the EOC were not dispatched.

**H.3.4. Teams are properly equipped with protective clothing, tools, supplies, survey instruments, communications devices, dose measuring devices (e.g., dosimeters and TLDs) and procedures.**

This was not demonstrated for all teams/personnel responding.

**H.3.5. Teams are debriefed upon return from assigned missions. Their accomplishments, failures, exposures, and status information are recorded and passed to other teams and emergency facilities.**

Not evaluated.

**H.3.6. Procedures are followed for implementing appropriate exposure guidelines. The appropriate individual authorizes emergency response personnel to receive excess doses of site administrative limits or other appropriate criteria such as 10 CFR 20, Protective Action Guidelines (PAGs), Immediate Dangerous to Life and Health values (IDLH's) and/or ERPGs, in the course of carrying out lifesaving or other emergency activities.**

This was not demonstrated. The IH showed up late to the on scene command post and did not have the appropriate instrumentation for monitoring of substances. This is a reoccurring problem and still has not been fixed. This left several groups without that kind of support and the IH did not interface with the decontamination team to ensure that it was appropriate for the hazards.

#### **H.4. Radiological and Non-Radiological Hazard Surveys, Sampling, and Sample Analysis Teams.**

Note: Only radiological Field Sampling Teams were deployed and observed. Other surveys and sampling occurred on-scene and were performed by RCT and Industrial Hygiene personnel.

##### **H.4.1.1. Teams demonstrate the ability to implement their survey and sampling procedures in a timely manner.**

This was not demonstrated. Timely on-scene ICO support by the RCTs and Industrial Hygiene was lacking.

##### **H.4.1.2. Teams demonstrate proficient use of protective equipment such as protective clothing and respirator or filter masks.**

The Fire Department personnel observed by RFFO demonstrated proper respiratory protection according to the applicable CFR's.

##### **H.4.1.3. Equipment needed to perform emergency response functions such as vehicles, calibrated instrumentation, tools, supplies, and communications is readily accessible.**

This was not adequately demonstrated. PPE was not available for all FST members deployed. Communications problems existed due to lack of radios with batteries and the heavy radio traffic caused problems due to unavailability of open channels.

##### **H.4.1.4. Teams have maps or general arrangement drawings showing pre-determined and potential monitoring points.**

This was demonstrated.

##### **H.4.1.5. Teams are briefed on facility and meteorological conditions and exposure control procedures before deployment.**

The teams were briefed regarding weather conditions and PPE requirements but one team was deployed without the appropriate PPE.

##### **H.4.1.6 Teams are informed in a timely manner of changes in facility conditions.**

This was not applicable to the scenario (i.e., there were no degrading or changing facility conditions to relay).

**H.4.1.7. Teams are informed in a timely manner of changes in meteorological conditions.**

This was demonstrated.

**H.4.1.8. Instruments are set on the proper scale prior to the controller supplying scenario driven measurements.**

This was demonstrated.

**H.4.1.9. Teams transmit readings and results to their team coordinator (e.g., in Technical Support Center (TSC), Operation Support Center (OSC), or Emergency Operations Center (EOC)).**

This was demonstrated.

**H.4.1.10. Emergency workers responding to a radiological event who enter the plume or contaminated facility environments have appropriate dosimetry.**

This was demonstrated by the FSTs but not evaluated at other locations.

**H.4.1.11. Field teams are well directed and controlled by emergency response management, including:**

- Providing directions to survey specific areas,**
- Setting exposure limits for survey teams,**
- Tracking teams exposures, and**
- Soliciting and recording survey results.**

This was demonstrated.

**H.4.1.12. Survey apparatus are maintained, calibrated, and labeled (e.g., survey instruments, CAMs, portable air samplers).**

This was demonstrated.

**H.4.1.13. Teams minimize their radiological exposure by exiting high airborne and whole body dose areas when not actively engaged in sample and survey activities.**

This was not applicable to the scenario.

**H.4.1.14. Monitoring capability is adequate in terms of range reliability, calibration, relationship to procedures, availability to assessment personnel (e.g., by meter, computer, or communications), and availability for major analyzed hazards.**

This was demonstrated.

**H.4.2. Survey Criteria:**

**H.4.2.1. Teams demonstrate proficiency in taking surveys, and in logging results in accordance with procedures.**



**H.6.4. Search and rescue operations are carried out in an efficient, coordinated manner:**

**Medical and health physics personnel coordinate their efforts, and Injured personnel are properly immobilized and moved.**

This was demonstrated.

**H.6.5. When responding onsite, both onsite and offsite fire personnel are outfitted with the appropriate specialized equipment and supplies specific to the onsite hazards (e.g., radiological survey instruments, respiratory protection equipment and toxic gas sampling equipment).**

This was demonstrated by the Fire Department personnel observed.

**H.7.1. Facility and field repair and maintenance activities are carried out in a timely and efficient manner.**

Not evaluated.

**H.7.2. Simulation of repair activities is realistic enough to provide confidence that the activity could have been performed during a real emergency.**

Not evaluated.

## **I. Security Measures**

**STANDARD: Protective force personnel and equipment provide effective support in emergency situations.**

An overall assessment of this standard was not made. Individual criteria were assessed below.

**I.1. Effective command and control of protective force personnel and equipment in response to an emergency are demonstrated.**

This was demonstrated.

**I.2. Determination/implementation of the appropriate access and egress control measures for the plant site, site areas, and facilities is demonstrated:**

**Access and egress control is properly maintained.**

**Security practices or procedures provide for the timely movement and access of site/facility operating and response personnel (including offsite personnel) to required areas during emergency situations.**

This was not adequately demonstrated and has been a recurring problem. Personnel were allowed to access the accident scene during response and vehicles could approach to within a few feet.

**I.3. If appropriate, the timely accountability and protection for Special Nuclear Material (SNM) and other critical DOE assets under emergency conditions are demonstrated (e.g., an administrative check is made immediately upon re-entering the area, such as a limited lock-down or full scale verification).**

This was demonstrated. WSI immediately initiated a Protected Area (PA) lock-down in response to the emergency. This was an appropriate response and allows for positive protection of SNM during emergency conditions. The emergency in this case could have been a diversionary tactic.

**I.4. Pre-arranged protocol for local law enforcement backup of onsite security force is used (e.g., use of deadly force, weapons employment, tactics, code words, radio frequencies, etc.).**

Not applicable to the scenario.

**I.5. Local law enforcement who augment onsite security forces are outfitted with specialized equipment and supplies specific to the onsite hazards (e.g., radiological survey instruments, respiratory protection equipment, toxic gas sampling equipment).**

Not applicable to the scenario.

## **J. Emergency Facilities and Equipment**

**STANDARD: Facilities and equipment are adequate to support the emergency.**

An overall evaluation of this standard was not made due to the limited extent of the evaluation in this area.

**J.1. Activation of the emergency facility and the operation of emergency equipment (e.g., HVAC system, radiation monitors, and computer systems) follow approved procedures.**

This was adequately demonstrated.

**J.2. The intended functions of a particular emergency facility or piece of equipment is capable of adequately supporting the emergency response ...**

This was not demonstrated. There were numerous problems with radio communications. Problems included lack of batteries as well as overloading the radio system which prevented some individuals from being able to contact others in a timely manner (e.g., the RCTs in Medical could not contact the Radiological Foreman at Incident Command.)

## **K. Recovery and Reentry**

**STANDARD: Adequate recovery from an emergency and reentry into the affected facility is demonstrated.**

This standard was not satisfactorily met.

**K.1. Approved procedures for recovery are used. Recovery demonstrates:**  
Decision making and communications associated with termination of an emergency. The appropriate organizational authority, as outlined in the emergency plan and/or procedures, declares the recovery phase is to be entered.  
Dissemination of information to Federal, state, tribal, and local organizations regarding the emergency and relaxation of public protective actions,

This was demonstrated by the Radiological FSTs.

**H.4.2.2. Teams keep survey probes properly protected.**

This was demonstrated by the Radiological FST.

**H.4.3. Sampling Criteria:**

**H.4.3.1. Teams demonstrate proficiency in collecting samples, bagging and marking samples, and logging results in accordance with procedures.**

This was not demonstrated. The FSTs were requested to take environmental samples. This was not appropriate since FST members that were dispatched had no training regarding environmental sampling methods.

**H.4.3.2. Teams leave the plume (or high background area) and move to a low-background area before attempting to count air sample media, swipes (smears), and other low level samples.**

This was demonstrated.

**H.4.3.3. Samples are properly analyzed in the field or transported to a laboratory.**

The response did not include demonstration of this criterion.

**H.4.4. Sample Analysis Criteria:**

Samples were not sent to a laboratory.

**H.5. Medical**

**H.5.1. Immediate, onsite first aid and emergency medical treatment for workers is demonstrated, including those with radiological and/or hazardous material contamination.**

This was demonstrated.

**H.5.2. Onsite personnel who respond to a medical emergency demonstrate adequate first aid or emergency medical treatment training.**

This was demonstrated.

**H.5.3. The medical team demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.**

This was demonstrated.

**H.5.3.1. Transportation of injured onsite personnel to onsite or offsite medical facilities is accomplished in a timely manner.**

This was demonstrated.

**H.5.3.2. Proper contamination control procedures are demonstrated.**

This was demonstrated.

**H.5.3.3. Crew communicates with the receiving medical facility while enroute. Communications are adequate for the ambulance to communicate with the receiving medical facility.**

This was not demonstrated. Occupational Medicine did not receive any initial casualty status from the EMTs on-scene or from the victims themselves and implemented their own triage system for initial victim assessment. EMTs on-scene did conduct triage in accordance with standard body tagging system, however the tags were not present on the victims when they arrived at Medical.

**H.5.3.4. Proper emphasis is placed on medical treatment, versus radiological contamination, for contaminated/injured personnel.**

This was demonstrated at both on-site and off-site medical facilities.

**H.5.4. The adequacy of the onsite medical department's equipment, procedures, and personnel for handling contaminated, injured and/or exposed personnel is demonstrated.**

This was demonstrated.

**H.5.5. Onsite and offsite medical facilities are outfitted with specialized equipment and supplies specific to the onsite hazards (e.g., radiological survey instruments, chemical neutralizing agents and contamination control supplies).**

This was demonstrated.

**H.6. Fire and Rescue Criteria:**

All observed Fire and Rescue activities were appropriately executed and adequately demonstrated the criteria.

**H.6.1. Appropriate fire/rescue personnel and equipment are assembled and deployed to the scene in a timely manner.**

This was demonstrated.

**H.6.2. Personnel take necessary precautions for contamination, exposure, heat, and personnel safety.**

Due to the size of the area involved in the event, RFFO was not able to observe Fire Department responders in all locations. This criterion was demonstrated by the personnel observed. However, evaluators from outside organizations observing in other areas during the exercise did note problems with contamination precautions.

**H.6.3. The fire is extinguished in a timely manner, based upon the response observed.**

This was demonstrated.

**L.3.1. Chief evaluator is identified by name.**

Controllers serve the dual function of evaluators. Therefore, criteria that duplicate controller criteria above have been deleted.

**L.3.6. Evaluators assemble and present a realistic self-assessment at their formal critique.**

This was demonstrated. RFFO and outside organization evaluation did not identify any significant items not addressed during the critique.

**L.4.1. Meaningful initial critiques, providing all participants (e.g., players, controllers, and evaluators) an open forum in which discussions regarding positive and/or negative aspects of the exercise, are held. These critiques address:**

- Overall exercise performance (e.g., review of scenario events, shortcomings of the scenario and exercise conduct, and anticipated versus actual player actions),
- Assessment of participant performance,
- Adequacy of emergency response procedures/other documentation, and
- Adequacy of facilities and equipment.

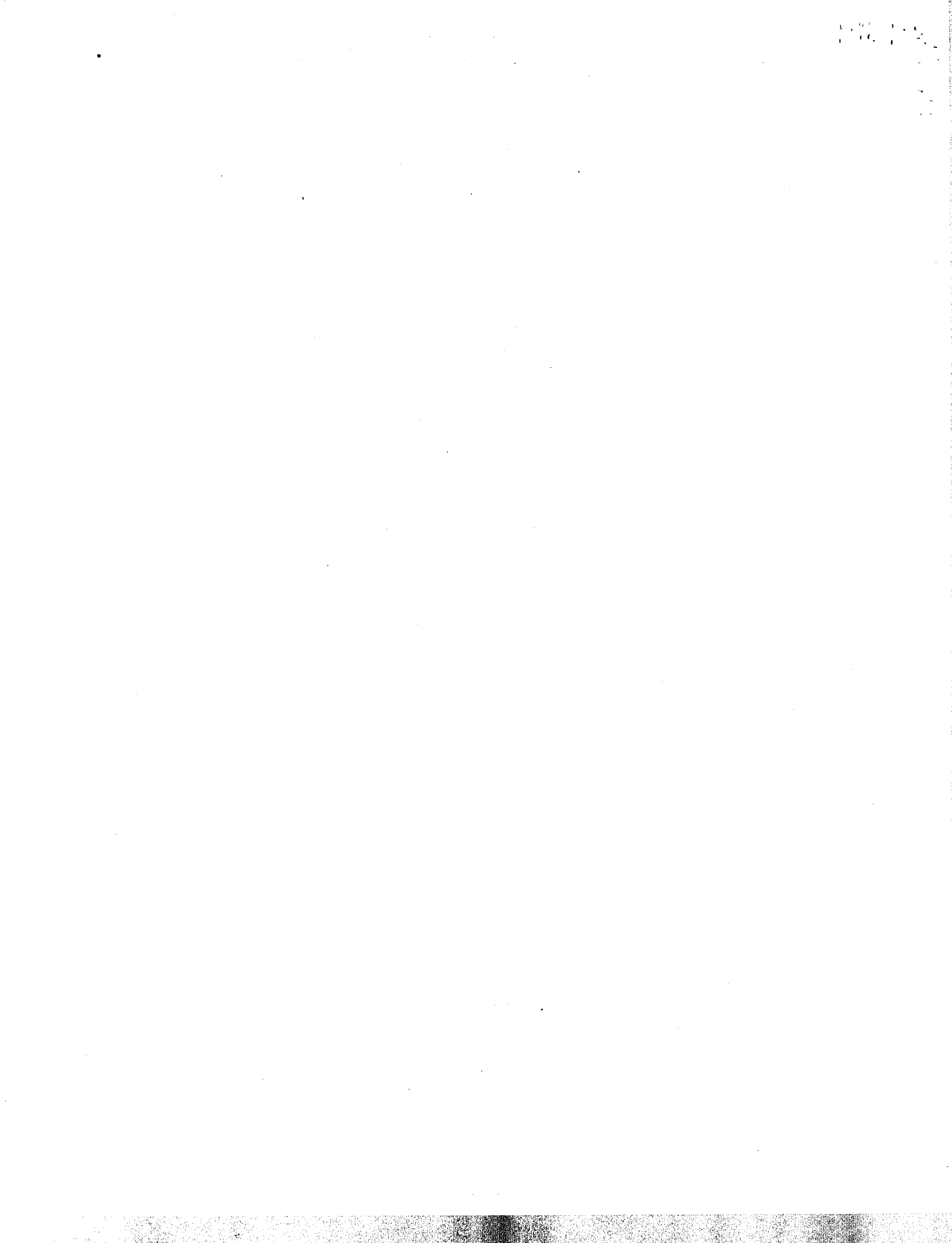
This was not demonstrated. While the controller/evaluator critique was unbiased and critical, the player critiques left the participants with a false impression of success.

**L.4.2. A management level, formal briefing, attended by all key players, key controllers and key evaluators, incorporating all identified and validated issues of overall performance, deficiencies and improvement items, is held.**

This was not demonstrated. An in place participant critique occurred following termination of the exercise. A controller/evaluator critique with all controller/evaluators occurred the next day. A lead/key controller/evaluator critique occurred sometime later. The last critique was the only one where it was planned that corrective actions would be discussed. Management level briefings do not include all key participants, key controllers, or key evaluators.

**L.4.3. The self-assessment process analyzes critique issues to determine root cause of the identified weakness/problems and documents them for corrective actions.**

The significance of problems with the response was downplayed as was the systemic nature of many of the problems. The root cause analysis performed to support corrective actions occurred after many of the corrective actions were identified and implemented. Additionally, the results of the root cause analysis were only presented in generalities. Therefore, an evaluation can not be made as to the appropriateness of any additional corrective actions.



**Establishment of a recovery organization, and  
The establishment of general criteria for resumption of normal operations.**

The recovery manager was appointed however, recovery was not demonstrated. There was no demonstration of communications capability or chain of command demonstrated. It was not possible to get recovery-related tasks accomplished such as the coordination of a tow truck, telephone poles, notification of information with offsite agencies etc.

**K.2. Possible dosages are estimated for workers, onsite personnel and the general public. Workers, onsite personnel, and the general public are protected from unacceptable hazardous exposure during recovery and reentry activities.**

Not evaluated due to early termination of the exercise.

**L. Conduct Of Exercise**

**STANDARD: Exercises emphasize facility-specific emergency events and response activities and minimize the use of generic, non-specific simulations.**

This standard was demonstrated in part. The criteria below not demonstrated though few in number are significant enough to prevent overall evaluation of this standard to be positive.

**L.1.1. The scenario is technically accurate in terms of operations (e.g., thermal-hydraulic, and system status), radiological, chemical, and meteorological data.**

The scenario was not truly accurate since if the propane tank had exploded there would have been greater damage to the immediate scene. If the tank had not exploded, the possibility of the tank still BLEVEing was not outlined in the scenario.

**L.1.2. The scenario sets clear, measurable objectives for all participating organizations (e.g., contractor, site security force, DOE Field office, and participating local and state agencies).**

This was partially demonstrated. The exercise documentation contained clear objectives. However, the scenario was not designed for all the objectives to have the opportunity to be met.

**L.1.3. Adequate controller and evaluator instructions are provided.**

This was demonstrated.

**L.1.4. The scenario employs a challenging sequence of events with provisions for realistic freeplay.**

This standard was demonstrated.

**L.1.5. Simulations (versus actual performance or walkthroughs) are held to minimum, commensurate with actual site facility operations.**

This was demonstrated.

**L.1.6. Message injects (i.e., contingency messages) are prepared to cause actions to occur in the event that player action does not meet exercise objectives requirements.**

This was demonstrated.

**L.2.1. A controller organization is established. The number of controllers, evaluators and observers are determined such that all elements to be evaluated are covered, but do not interfere with, limit, or impeded response by players.**

Additional controllers were required however, due to inclement weather the loss of some controllers was beyond the control of the contractor.

**L.2.2. Controllers are readily identifiable and separate from all players.**

This was demonstrated.

**L.2.3. The chief controller and lead facility controllers are assigned by name.**

This was demonstrated.

**L.2.4. Functional activity controllers are knowledgeable and trained in the technical requirements of the activities they are controlling.**

This was demonstrated.

**L.2.5. Event timelines are prepared by the control organization to assist in scheduling and tracking activities to meet exercise objectives.**

This was demonstrated.

**L.2.6. Controller training is conducted prior to the exercise.**

This was demonstrated.

**L.2.7. Controllers have adequate communications to meet their needs.**

Communications were generally a problem on-site since the player and controller activity overloaded the system at times.

**L.2.8. Controllers demonstrate ability to respond to unforeseen problems such as:  
Participants pointing out errors in the scenario,  
Participants requesting data which have not been developed for the scenario,  
Participants taking actions sooner than expected. Participants developing corrective actions that have not been considered by the scenario authors.**

This was not demonstrated. The participants used channels other than expected to obtain information regarding the material involved in the incident and the Controllers could not correct the resulting confusion.

**L.2.9. Controllers adequately perform their responsibilities and functions (i.e., messages are given correctly, accurately and timely).**

This was not demonstrated. The Controllers lost control of the exercise allowing the early termination of play by a player prior to demonstrating all Exercise Objectives.



**Appendix B**  
**RFFO Observations of March Site Drills**

This appendix contains two sets of informal observations by RFFO from two Site Drills performed in March 1995. These have not been through an extensive factual verification process. The observations have been provided to the contractor emergency preparedness organization for information only.

**Observations from DOE Observers On-Scene and in EOC**  
**Site HAZMAT Drill -- Building 884 3/7/95**

PA lockdown during the drill was not appropriate or should have allowed the same personnel out during a drill as would be during an Emergency. The Security representative in the CMT was able to get personnel released from the PA and this is important since during an Emergency there may be a need to have a response from the PA that is by personnel not planned for.

Alternates to fill the vacant positions in the HAC were not called until after the initial HAC briefing. This should have been done as soon as it was apparent that some of the Team requested to respond were not available since this may be required in an Emergency.

There was confusion within HAC regarding which IH resources were being discussed since there was an IH with the Rad team, an IH advisor, and an IH FST.

TRAC being frozen showing the plume from the beginning of the incident caused some confusion in the EOC.

The CMT was questioning the SS/IC determination of a SAE. The IC should have briefed the CM or the CM should have requested a brief immediately.

Periodic briefings should have occurred in the EOC and did not. This resulted in some EOC personnel not knowing what was going for possibly up to a half hour or more.

Adequate information was available early on in the incident to downgrade the PAs taken for the balance of the Site. This call is up to the EOC not the IC who is primarily concerned with the area immediately surrounding the scene. Once the call to downgrade was made in the EOC was handled well regarding the area that may continue to be affected.

Too many participants in the EOC.

Timeliness of the SS's decision to implement the RCRA Contingency Plan (requested initial notifications) was questioned.

Controllers should have stopped all activity regarding the response during the period where play stopped. Controller in PI Cell did not. Controller in the HAC did. This may be an indication that additional or refresher training may be needed.

The building custodian was on-scene early during the event apparently with information pertaining to the contents of the building. This was good though she did not know where to report or could not find the IC.

Fire Department seemed to be the only resource onsite that knew where overpack drums could be obtained.

Initial and follow-up LS/DW announcements that should have been made by the PI Cell were not.

Additional information visible from outside a building regarding hazardous substances located within may be of value for responders.

The lack of IH support at the scene was obviously a problem. Could this be handled by IH instrumentation and/or personnel being an integral part of all FSTs? Additionally, the FST that responded on-scene did not have appropriate PPE to go enter the scene and take samples without the IH support. Perhaps the FSTs should all carry a full complement of PPE to respond in any situation.

EG&G EP announced the drill to all of Team 1 in advance. This is not acceptable since one of the objectives of the drill was testing of notification and part of the personnel being notified had advanced warning. There is a concern that only using Team 1 during the drills will result in the balance of the EOC teams not being prepared to respond when necessary.

The SS and TCP personnel did not control the scene and immediate surrounding area. While traffic control points were in place, pedestrians were allowed to walk through the area on the sidewalk. Once the IC Post moved inside, personnel arriving on-scene with/as resources did not know where to go though they did all approach the area looking for the SS.

The Fire Department responded driving one vehicle through and leaving the other vehicle standing in the area the plume would likely have passed over.

Request was for still video but response to the scene was with a standard camera. The ability to operate still video equipment was not exercised.

An on-scene safety concern was noted in that the HAC can provide plantwide wind direction on 15 minute intervals but this has little significance for responders. Suggestions were made to have a green flag or green wind sock on scene (could serve to identify where the IC is as well.).

ERPGs/PARs/PAs for PCBs not available to CST.

The on-scene response became a table-top exercise once the Fire Department left. Also, the IC did not designate a new Operations Manager for the ICO once the Fire Chief left.

Did the Fire Department use foam or water during the response. Suggested that foam should have been used since fire could have involved reactive RCRA materials.

Importance of the response diminished within the EOC once it was determined that the incident was outside the PA and involved LLW.

The WEMSC data was not provided to the CST. Faxing the document was considered but not done (should not even have been considered). A runner should have copied the document (if still needed on-scene) and brought the copy to the EOC.

Questions regarding what people in surrounding buildings would be instructed to do were raised as well as how any specific instruction would be given.

The IC requested two loads of dirt but there was no manpower available on-scene once the Fire Department left in response to the propane leak.

**Appendix B**

**RFFO Observations of March Site Drills**



There was no critique on-scene with the IC participants following termination of the drill. It is not known if the Fire Department had a critique.

### **Criticality Drill 771 on 3/15/95 DOE Observations**

CMT performed well. Periodic briefings occurred. However, CMT does not have resident on it the knowledge and technical expertise for a criticality event. The CMT did ask the NS Rep in the HAC to answer a couple questions but additional requested information kept the HAC and IC focused on issues not germane to the situation. Suggest that continuing CMT training include technical briefings regarding criticality. IC and CM communications did not occur (on-scene problem).

PA lockdown issues need to be addressed. Personnel need to understand why it happens and identify and train to a procedure for dealing with it.

One individual was not accounted for until 49 minutes had passed and then was found in Building 111.

It took 43 minutes for Communicator to arrive on-scene. Problems contributing to the delay included IC Post not identified and lock down of PA. Problems resulting from the need for the individual to respond from outside the PA included violation of protective actions and communication from the IC was not established. The IC should have just made anyone available his communicator.

PPE requests were made to the EOC within 15 minutes of the event but were not available until 1 hour and 15 minutes later. When supplies did arrive, they were not the correct ones.

Wind shifts were a problem. There was no indicator on-scene for the IC and building personnel to use. The Fire Department had a sock up and stayed out of the plume. The SS had parked in plume ignoring wind direction. The SS left the vehicle there and approached the building. Building personnel had to go and get it so that the SS could make a call. The wind shifted and the command post was again in the plume. The IC was in the plume more often than not. The visual use of steam vents and smoke stacks were ignored.

The on-scene communications did not go to the IC at the scene. Instead it all went right to the EOC. This included information as critical as the need for additional bottles. Another example is the information from the re-entry team that went first to the EOC then several minutes or so later the information was transmitted from the EOC to the scene. This significantly inhibited the on-scene command and control.

The Safety Officer was assigned other duties (Re-entry Officer) in addition to scene safety. This prevented the individual from performing his on-scene safety duties as required.

Rad and IH were on the same team but talking on different channels to HAC causing poor communications flow.

The FST response took too long. FSTs have a staging problem since FST-dedicated vehicles are at the garage but the team members first report to T130E. The FSTs do not

appear to be well coordinated. The teams are composed of individuals from the same discipline so Rad FST needs IH support from somewhere and IH FST requires Rad support. (This was identified in the drill on 3/7 as well.)

The HAC Manager approved FST request for removal of respirators. Since the situation was a drill, a Controller should have authorized the simulation. In an Emergency response an additional team would have to have been dispatched or their activities put on hold until they were able to resume.

IH showed up on-scene without equipment. The Criticality Engineer (s?) that showed up on-scene were not utilized.

A staging area on-scene was not designated for resources (both personnel and materiel) arriving on-scene. This is part of the IC process. Failure to use a staging area caused a "cluster" problem around the IC and may have contributed to the ineffectual use of resources available on-scene. Additionally, the Command Post was not identified in a standard manner (green light or flag) so that personnel arriving on-scene could locate it (identified as a problem during 3/7 drill as well).

Re-entry occurred before a decontamination line was set up and before backup equipment such as additional bottles were staged appropriately.

ICO identification took too long. It was approximately an hour into the event before positions were filled and personnel identified.

Neutron detector locations were not known or understood in the HAC.

RCTs on-scene did not have neutron detectors. A directional gamma detector should be readily available on-scene also. There is a general lack of knowledge about the availability of specialized equipment for a response. Much of the equipment exists at the Site but is not utilized (example is a directional gamma detector.)

Too much time and effort was spent on the plume and its movement for the a criticality event. More attention should be paid to the ambient radiation fields. (Indicates some technical training is required.)

Too much time elapsed from the beginning of the incident to when the individuals exposed were identified.

The possibility that the crit was in 774 was ignored. Dosimeters from 774 personnel were not checked and panels were not checked in 774. This may be due to a lack of a clear understanding of the characteristics of a real criticality event.

The NS rep in the HAC did not elicit information from a Criticality Engineer. The NS rep was not really a player. The HAC Manager or anyone else in the EOC requested little information from NS.

A technical weakness in the drill design was omitting TRAC and dose assessment information since the HAC seemed to need or want it until the incident was determined to be an inadvertent alarm. Also, there may have been a problem with the amount of material reported in Rm. 180A of 771. The amount reported during the drill was much lower than actually exists. Was the problem with the information from the building or did the Controllers feed that information?

HAC dose assessments were based on wind gust speed instead of minimum wind speed which would have been more conservative since dispersion would have been less. There was a software/procedure mis-match related to for running TRAC under a criticality scenario. The problem was identified and fixed during the drill.

SEOC was not supported by the CMT. OCC Manager had to call seven times to obtain information and notification of termination of the drill was not received until OCC Manager called in 10 minutes after the termination. These both indicate problems regarding knowledge of procedures. Procedures call for periodic contact from EOC to OCC Manager and termination of an event must be coordinated with the SEOC (since SEOC may require additional support prior to termination.)

11/11/11





## **Appendix C**

### **Contractor-Identified READY-94 Objectives**

11/11/11



**EMG: E.2, F.3.6)**

- 11.a. Demonstrate the ability to respond in a timely manner.
  - 11.b. Demonstrate consideration of ICO staff and team rotation, to alleviate heat stress and/or dehydration.
  - 11.c. Demonstrate availability and use of adequate equipment and supplies needed to effectively support radiological and chemical operations.
  - 11.d. Demonstrate monitoring and controlling of emergency worker exposure conditions.
  - 11.e. Demonstrate the capability to properly assess and control contamination at the scene.
  - 11.f. Demonstrate the capability to properly handle contaminated personnel and equipment.
  - 11.g. Demonstrate use of personnel protective equipment (PPE) by response personnel to effectively support radiological and chemical operations personnel.
  - 11.h. Demonstrate the ability to monitor and decontaminate emergency workers, equipment and vehicles.
- 12. Demonstrate the capability to develop dose projections and protective action recommendations regarding worker and public safety. (Ref: 92-FS-001, HS-02, HS-10, HS-11, HS-12) (DOE EMG: E. 1, E.2)**
- 12.a. Mobilize and deploy field monitoring teams, collect and report data and provide monitoring for onsite non-essential personnel.
  - 12.b. Coordinate field monitoring and ensure field data can be used to verify and update dose assessments, PAs and PARs.
  - 12.c. Demonstrate ability of the Hazard Assessment Cell (HAC) to collect, analyze and evaluate radiological and/or chemical release samples and surveys.
  - 12.d. Demonstrate the use of TRAC and offsite maps and data worksheets.

### **Public Information:**

- 13. Demonstrate the capability to promptly alert and notify the public within the Emergency Planning Zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State and local officials. (DOE EMG: D.1 - D.8)**
- 13.a. Demonstrate the capability to promptly advise the media with appropriate emergency information concerning RFP when the public within the EPZ must be notified.
- 14. Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the plant populace, news media and the public. (Ref: READY-93 - DEF 14, DEF 14/1, DEF 14.2, DEF 14c, W14c, W14d; DOE EMG: G.3, G.5)**
- 14.a. Demonstrate the ability of the EOC Information Team to provide coordinated information for release to the media by the JPIC.
  - 14.b. Demonstrate the capability of the plant spokesperson to provide concise briefings to the JPIC staff.
  - 14.c. Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

14.d. Demonstrate the capability of the Telephone Response Team to properly handle incoming calls.

### **Occupational Medicine:**

**15. Demonstrate the adequacy of the equipment, vehicles, procedures, supplies, and personnel of medical facilities responsible for transport and treatment of contaminated and/or injured or exposed individuals. (Ref READY-93E EMG H.5.3)**

15.a. Demonstrate identification and proper triage of casualties and directing, coordination and arrangement of care for trauma cases with designated hospitals.

15.b. Demonstrate communications procedures with First Responders (EMTs), Occupational Medicine (OM) and designated community hospitals (Saint Anthony's- North and University).

15.c. Demonstrate proper request for assistance by offsite hospitals, as required, in accordance with Memorandum of Understanding (MOU).

### **Reentry and Recovery:**

**16. Demonstrate the capability to develop decisions on relocation, reentry, and return. (DOE EMG K.1)**

16.a. Determine reentry criteria.

16.b. Assign a formal Recovery Manager and Team.

16.c. Convene a Recovery Team to develop, complete and have approved a recovery turnover document.

### **Reentry and Recovery:**

**16. Demonstrate the capability to develop decisions on relocation, reentry, and return. (DOE EMG K.1)**

16.a. Determine reentry criteria.

16.b. Assign a formal Recovery Manager and Team.

16.c. Convene a Recovery Team to develop, complete and have approved a recovery turnover document.

### **Security and Safeguards Measures:**

**17. Demonstrate the ability to provide protective force personnel and equipment to effectively support emergent situations. (DOE EMG I.1 - I.5)**

17.a. Demonstrate protective force response to and resolution of a security situation.

17.b. Establish communication lines and pass accurate information between the Tactical Operations Center (TOC) and the ICO Wackenhut Services, Inc. (WSI) Representative.

17.c. Establish communication lines and pass accurate information between the EOC and the TOC.

17.d. Demonstrate protective force shift change on post. WSI shift change contingent upon duration of events.

**18. Demonstrate the ability to respond to conditions that may indicate a loss of Special Nuclear Material (SNM).**

18.a. Demonstrate the ability to collect, analyze and evaluate data pertaining to the status of SNM.

## **Appendix C Contractor-Identified READY-94 Objectives**

The following objectives were provided by the contractor for READY-94. These objectives were used when developing the exercise scenario and were the basis for the contractor evaluation of the response during READY-94

### **Notification and Mobilization:**

- 1. Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations in accordance with the Rocky Flats Environmental Technology Site (RFETS), Emergency Plan (EPlan). (DOE EMG A.4, D.1, H.1, J.1)**
  - 1.a. Activate and staff the Emergency Management Organization (EMO), which includes the Emergency Operations Center (EOC) and the Incident Command Organization (ICO).
  - 1.b. Notify and update onsite/offsite authorities, in accordance with DOE Order 5000.3A, RFETS Procedure 4-15230-EPIP-04.02, and Standard Occurrence Notification Guide (SONG).
  - 1.c. Demonstrate the capability to provide an Offsite Coordination Center (OCC) Representative to activate the Jefferson County Incident Command Post (JCICP), in accordance with existing procedures
  - 1.d. Demonstrate communications capability between the OCC and the JCICP.
  - 1.e. Demonstrate understanding of and compliance with directions given via LS/DW announcements

### **Emergency Assessment, Classification, Command and Control, and Mitigation:**

- 2. Demonstrate the capability to properly assess and classify an emergency event, and perform command and control and mitigation activities during emergency operations. (DOE EMG: A. 1 - A.8)**
  - 2.a. Identify and properly classify emergency conditions and determine onsite Protective Actions (PAs).
  - 2.b. Determine source terms and dose projections, and make decisions to upgrade or downgrade the emergency classification and PAs.
  - 2.c. Demonstrate sound command and control and emergency mitigation techniques.
- 3. Demonstrate the capability to make timely and appropriate protective action recommendations (PARs) to the State of Colorado. (ref. READY-93 - DEF 03; DOE EMG F.1, F.2, F.3, H.3.6, H.4.1.13, H.4.1.14)**
  - 3.a. Determine appropriate offsite (PARs), and upgrade/downgrade as required.
  - 3.b. Demonstrate capability of Colorado Department of Health (CDH) to effectively use the Terrain-Responsive Atmospheric Code (TRAC) as an adjunct decision-making tool. *CDPHE and DOE/RFFO will use this objective as a training tool.*
- 4. Demonstrate the ability to respond to an emergency utilizing appropriate equipment and procedures for determining field radiation contamination. (Ref: READY-93 - DEF 04, W04; DOE EMG E.1.5, H.3, H.4.1, H.4.2, H.4.3)**
  - 4.a. Demonstrate availability of field monitoring team's equipment adequate to support emergency response

activities for both radiological and chemical events.

4.b. Demonstrate the appropriate use of equipment and procedures to obtain radiological and/or chemical samples of the airborne plume.

4.c. Use the proper equipment in determining the type(s) of hazard(s) and source term of release of radiological hazard(s).

**5. Demonstrate the organizational capability and resources necessary to control evacuation traffic flow and access to evacuated, relocated and sheltered areas. (Ref. READY-95 - W05)**

5.a. Demonstrate the ability of Protective Force field elements to establish and maintain effective traffic control points and facilitate evacuation.

**6. Demonstrate timely evacuation and accountability for building and emergency response personnel, as required. (DOE EM.2, F.3)**

6.a. Utilize applicable access/egress control measures and accountability methods.

**7. Demonstrate the capability to maintain EMO staffing on a continuous, 24-hour basis through an actual shift change. (DOE EMG H.1.5)**

7.a. Demonstrate EMO shift change in the EOC.

**8. Demonstrate the capability to identify the need for external assistance and to request such assistance from Organizations. (DOE EMG B.2)**

8.a. Demonstrate the ability and implement external medical assistance.

8.b. Demonstrate the ability to coordinate and implement external security assistance.

### **Emergency Response Facilities and Equipment:**

**9. Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency response. (Ref: READY-93 DEF 09; DOE EMG: J. 1, J.2)**

9.a. Demonstrate proper use of communications, procedures and equipment to support emergency response activities.

9.b. Demonstrate proper use of reference materials, checklists and other tools for performing analyses as part of response, in accordance with RFP (EPlan).

**10. Demonstrate the capability to communicate with appropriate emergency personnel at facilities and in the field and offsite. (DOE EMG: B.3 - B.8, E.1.8, H.2.1, H.1.6.1, H.2.10, H.3.5, H.4.4.4)**

10.a. Demonstrate adequacy of detail and consistency of terminology between the EOC, ICO, and functional work centers.

10.b. Demonstrate Life Safety/Disaster Warning (LS/DW) announcements contain specific actions to be taken.

### **DOSE Assessment and Control.**

**11. Demonstrate the capability to continuously monitor and control radiation and/or chemical exposure to emergency workers. (Ref: READY-93 - W10.1, W10.2; DOE**

18.b. Complete timely accountability and protection of SNM and other assets under emergency conditions.

**Exercise Scenario, Conduct and Control:**

**19. Demonstrate the ability to develop a scenario, conduct, control, and evaluate an exercise that allows the participants to demonstrate the stated objectives.**

19.a. Provide a trained and qualified Controller/Evaluator organization.

19.b. Conduct post-exercise critiques and identify areas requiring corrective actions.

6-11-72

