



The Under Secretary of Energy
Washington, DC 20585

October 16, 2007

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U.S. DEPARTMENT OF ENERGY

The Honorable A. J. Eggenberger
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004

Dear Mr. Chairman:

This letter is to inform you that the Central Technical Authority (CTA) for the Department of Energy has completed Commitment 3 in Revision 2 of the Department's 2004-1 Implementation Plan. The deliverable for this commitment is the enclosed memorandum to Secretary Bodman declaring that the CTA function is implemented and providing the basis for this declaration.

If you have any question please contact me or have your staff contact Mr. Richard Lagdon at (202) 586-9471.

Sincerely,

A handwritten signature in black ink, appearing to read "C. H. Albright, Jr.", written in a cursive style.

C. H. Albright, Jr.

Enclosure

cc: Clay Sell, Deputy Secretary
Mark Whitaker, Departmental Representative



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Implementation of Core CTA Responsibilities
October 2007

Attachment 1

CTA Responsibility	CTA Actions/Accomplishments
<p>1. Concurs with the determination of the applicability of DOE Directives involving nuclear safety included in contracts pursuant to DEAR 970.5204-2(b).</p> <p>2. Concurs with nuclear safety requirements included in contracts pursuant to DEAR 970.5204-2(c).</p> <p>3. Concurs with all exemptions to nuclear safety requirements in contracts that were added to the contract pursuant to DEAR 970.5204-2.</p> <p>4. Recommends to the Chief Health, Safety and Security Officer (HS-1) issues and proposed resolutions concerning DOE safety requirements, concurs in the adoption or revision of nuclear safety requirements (including supplemental requirements), and provides expectations and guidance for implementing nuclear safety requirements as necessary for use by DOE employees and contractors.</p>	<p>The first four functions and authorities of the CTA relate to management of nuclear safety requirements. The processes to execute these authorities have been captured in DOE O 410.1, <i>Central Technical Authority Responsibilities Regarding Nuclear Safety Requirements</i> (issued on August 28, 2007), which identifies CTA authorities and actions for specific regulations and directives, establishes related responsibilities and requirements for other Departmental elements, and establishes responsibilities and requirements for addressing nuclear safety regulations and directives in contracts.</p> <p>Further, CNS Standard Operating Procedures have been established to implement CNS responsibilities in support of the CTA, to provide consistent understanding of CNS responsibilities and how they are to be implemented, as well as a consistent methodology for evaluating requests for CNS or CTA concurrence. These SOPs include:</p> <p>CNS SOP-001, CNS Management System Description CNS SOP-002, Review and Concurrence of Regulations and Directives CNS SOP-003, Evaluating Contract Requirements</p> <p>CNS has been proactively involved with HSS-1 in the development or revision, and implementation of numerous requirements, including, DOE O 413.3A, <i>Program and Project Management for the Acquisition of Capital Assets</i>, and its implementation guides; DOE-STD-1189, <i>Integration of Safety into the Design Process</i>; DOE-STD-1104, <i>Review and Approval of Nuclear Facility Safety Basis and Safety-in-Design Document</i>; DOE Order 425.1C, <i>Startup and Restart of Nuclear Facilities</i>; and DOE Standard 1027, <i>Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23 Nuclear Safety Analysis Reports</i>.</p>

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<p>5. Maintains operational awareness of the implementation of nuclear safety requirements and guidance, consistent with the principles of Integrated Safety Management across the DOE complex (including, for example, reviewing Documented Safety Analyses, Authorization Agreements and readiness reviews as necessary to evaluate the adequacy of safety controls and implementation).</p>	<p>Support to line oversight activities at nuclear facilities is the primary activity of the CNS staff. The CNS staff provides subject matter and technical experts to participate with facility representatives, field office staff, and headquarters assessment teams. These teams are designed to reinforce the line oversight function by supplementing the existing processes and reinforcing expected performance metrics, standards, and requirements. As such, the CNS and staff work closely with federal line managers and, as necessary, coach and mentor on techniques, tools, and skills to improve and upgrade the quality of the Department's technical safety management capability. The CNS and staff also maintain operational awareness of field activities, including safety basis implementation, nuclear start-ups and restarts, personnel training and qualification, maintenance, criticality safety, conduct of operations, and radiation protection. CNS Site Leads have been established for Savannah River Site, Idaho, Richland, Pacific Northwest National Laboratory, Office of River Protection, Carlsbad, West Valley, Oakridge, Portsmouth/Paducah, Brookhaven and Argonne.</p> <p>The CNS and staff maintain awareness of production decisions so that the CTA can fulfill his role to assure that the desire to meet programmatic commitments is properly balanced with safety. Note that the operational awareness role is not intended to duplicate the independent oversight function.</p> <p>Applicable CNS SOPs include:</p> <p>CNS SOP-004, Participation in the ESAAB, EMAAB, and Equivalent Processes CNS SOP-005, Site Interaction and Assessment Review Process CNS SOP-008, Certification of Lead Auditors and Auditors to ASME NQA-1 Requirements</p>
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<p>6. Periodically reviews and assesses whether DOE is maintaining adequate numbers of technically competent personnel necessary to fulfill nuclear safety responsibilities.</p>	<p>CNS has been actively involved in identifying safety areas across the Energy complex where technical expertise needs to be strengthened. For example, CNS identified a lack of adequate number of quality assurance personnel supporting the Waste Treatment Plant project and worked with the Office of River Protection to strengthen this area. CNS continues to work with EM on this specific issue, recommending potential means of strengthening numbers of technically competent personnel to support high-risk nuclear activities.</p> <p>CNS has established CNS SOP-006, Evaluating Delegations of Nuclear Safety Authority and is drafting CNS SOP-009, Assessing Adequacy of Technically Competent Personnel</p> <p>Finally, CNS has supported CDNS efforts to establish a Safety Basis Academy which focuses on training and development of safety analysis professionals.</p>
<p>7. Provides inputs to, reviews, and concurs with DOE-wide nuclear safety related research and development activities.</p>	<p>R&D processes and procedures are implemented DOE-wide as part of the Implementation Plan for Recommendation 2004-1, Commitments 7 and 8. As such, the CNS participates in the collection, identification, and prioritization of R&D needs across DOE/NNSA through the Nuclear Safety Research & Development (NSR&D) Projects process.</p> <p>CNS SOP-007, Research and Development Activities, was developed to address this responsibility.</p>

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**2004-1 IP CTA Implementation Aspects
September 2007 Status**

Attachment 2

Aspects of the Department's Plan to Establish the CTA	Status
<p>1. Define the detailed functions, responsibilities and authorities for the CTA.</p> <p>2. Update the Department Functions Responsibilities and Authorities Manual (FRAM).</p>	<p>The DOE FRAM has been updated to include the CTA functions, responsibilities, and authorities. The directed revision to the FRAM was documented in letter to the DNFSB dated April 26, 2005. The FRAM was updated and approved on June 22, 2007 to include detailed functions, responsibilities and authorities of the Energy, Science and Environment CTA and CNS.</p>
<p>3. Complete a staffing analysis for technical experts to support the CTA.</p> <p>4. Fill the positions for supporting technical experts.</p>	<p>The Department concluded that the Office of the Chief of Nuclear Safety should be a small group of recognized experts with diverse technical education and experience who would provide operational awareness and technical nuclear safety advice to senior Energy line managers. The Office of the CNS has been established, and eight key technical positions were identified including:</p> <ul style="list-style-type: none"> • Chief of Nuclear Safety • Nuclear Engineer • Mechanical Engineer/Acquisition Professional • Nuclear Safety and Operations Engineer • Safety Engineer • Nuclear Safety Engineer • Quality Assurance (QA) Engineer • Software Quality Assurance Engineer • Nuclear Facilities and Tritium Risk Specialist <p>The CNS was selected as a respected expert in the field of nuclear safety. All the planned positions on the staff of the CNS were filled with permanent career Federal employees of the highest caliber. The results of the initial staffing of the Office of the CNS were documented in a memorandum for the Secretary of Energy dated October 27, 2006, and in a letter to the DNFSB dated October 30, 2006. One position, Nuclear Safety Engineer (now Seismic Engineer), however, has been vacated by a member who left to work for the CDNS; this position will be filled.</p>

**2004-1 IP CTA Implementation Aspects
September 2007 Status**

Attachment 2

<p>5. Define technical qualifications for the CTA and support staff.</p>	<p>The CNS and the seven “technical lead” positions have all been designated as Senior Technical Safety Managers (STSM) per the DOE technical qualification program. All of the personnel filling the technical positions identified above are either fully qualified as STSMs or are on schedule to complete their qualifications. Note that nearly all CNS staff members have completed Safety System Oversight qualifications; three CNS staff members have completed Nuclear Executive Leadership Training; and all members are pursuing Auditor qualifications as per ASME NQA-1b-2007, <i>Quality Assurance Requirements for Nuclear Facility Applications</i>.</p>
<p>6. Define the processes and protocols for fulfilling the CTA roles and responsibilities.</p>	<p>As indicated previously, DOE Directives and CNS Standard Operating Procedures (SOPs) are in place to define the processes and protocols to execute CTA functions.</p>
<p>7. Describe how the CTA will interface with other organizations.</p>	<p>The functions, responsibilities and authorities of the CTA and CNS, as well as the procedures and protocols for interacting with other DOE elements, have been added to DOE Directives, and captured in the CNS SOPs. Further, DOE O 410.1, <i>Central Technical Authority Responsibilities Regarding Nuclear Safety Requirements</i>, was issued on August 28, 2007 and identifies CTA authorities and actions for specific regulations and directives, establishes related responsibilities and requirements for other Departmental elements, and establishes responsibilities and requirements for addressing nuclear safety regulations and directives in contracts.</p>
<p>8. Establish an operating budget for fulfilling CTA duties.</p>	<p>The Office of the CNS has an operating budget which covers travel, training, and the use of outside experts and support service contractors necessary to support the functions of the CTA.</p>

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CNS Quarterly Report

Staff Activities for the Office of the Chief of Nuclear Safety Supporting the Under Secretary of Energy and the Under Secretary for Science

Report 2007- 2
April 1, 2007 to June 30, 2007



1.0 BACKGROUND

The Chief of Nuclear Safety was created to ensure the availability of technical expertise and provide operational awareness necessary for the proper implementation of nuclear safety by line management. With the appointment of an Under Secretary for Science, Secretary Bodman established the Under Secretary for Science as a third Central Technical Authority. Chief of Nuclear Safety (and Staff) now formally support the Under Secretary of Energy and the Under Secretary for Science in carrying out their functions of the CTAs including maintaining awareness of complex, high-hazard nuclear operations of EM, SC and NE sites, through such activities as: monitoring of applicable reports and performance metrics; reviewing various site-specific and complex-wide documents; technical discussions; and onsite visits.

CNS staff remain focused on integrating oversight activities with line management in each organization and continue to work proactively to support the implementation of DOE O 226.1, Oversight. Through such operational awareness, the CNS and staff have been successful in promoting a corporate approach to nuclear safety throughout the period of this report.

2.0 INTRODUCTION

This report documents the third-quarter of effort by the Office of the Chief of Nuclear Safety, from April 1, 2007, through June 30, 2007.

Support to line oversight activities remains the primary activity of CNS staff. Staff members assigned as leads for each of the major sites are responsible for interfacing with site personnel regarding oversight schedules. The CNS staff either provide support to needed assessments or select certain reviews with significant nuclear safety implications. CNS staff provide subject matter experts and knowledgeable individuals to participate with facility representatives, field office staff, and headquarters assessment teams. When additional support is necessary beyond the capabilities of assessment teams or a particular expertise is required that is not on staff, contractors are used for short-term assignments. Current travel requirements for staff approach 50% of available work hours. Participation in these teams is designed to reinforce the line oversight function by supplementing the existing processes and reinforce expected performance metrics, standards, and requirements.

The following table summarizes the field support activities for the past quarter. Appendix A, attached to this quarterly report, lists the field support and CNS staff activities during the reporting period. The staff provide their issues and observations to the line through the respective site or line organization's existing protocols. This process reinforces the existing management structure and provides a mechanism for continuous improvement. CNS staff follow up on the results and corrective actions periodically. As necessary, the CNS discusses issues with the respective line managers to ensure a common understanding.

The CNS staff is also extensively involved in the significant DOE headquarters activities that affect nuclear safety. Section 3 describes new activities; Section 4 describes ongoing activities; and Section 5 describes completed activities. Coupled with the field activities, the seven current CNS staff members have heavy workloads.

CNS Staff Field Activities - April 2007 to June 2007

Quantity	Activity
5	Criticality Safety Reviews
3	Facility Safety/Authorization Basis
2	Facility Startup/Restart
3	Project Management
4	Quality Assurance
3	Oversight Program
1	Integrated Safety Management System Review (participation)
3	Software Quality Assurance
7	Contract Requirements
30	Reviews by the Office of the Chief of Nuclear Safety

3.0 NEW ACTIVITIES

3.1 DNFSB Recommendation 2007-1, *Safety-Related In Situ Nondestructive Assay of Radioactive Materials*

3.1.1 Background

Three recent events at defense nuclear facilities involved the underestimation of holdup and the subsequent reduction in safety margin. In each of the events, site-specific corrective actions were taken based on the specific problem encountered. However, lessons-learned from the events were not formally shared across the complex to prevent recurrence at other facilities. Subsequently, the DNFSB issued Recommendation 2007-1, *Safety-Related In Situ Nondestructive Assay of Radioactive Materials*, which contains three major issues: (1) Lack of standardized requirements for performing measurements; (2) Lack of design requirements for new facilities that would facilitate accurate holdup measurement; and (3) Lack of research and development activities for new instrumentation and/or measurement techniques.

The Department has been aware of the need for improvements in holdup measurements at facilities such as the K-25/K-27 Decontamination and Decommissioning (D&D) Project. Prior to the recommendation, the Office of Environmental Management had initiated some site-specific actions toward addressing the *in situ* nondestructive assay (NDA) measurement of radioactive material holdup at the K-25/K-27 Project. In July 2006, the Oak Ridge Operations Office (ORO) directed the contractor managing this project to implement its NDA program independent of the line organization. In November 2006, ORO conducted an assist visit at the K-25/K-27 D&D Project. The objective of this review was to determine whether the contractor had established the necessary NDA equipment, data, and procedures to support the required criticality safety and waste management needs of the Project. The review identified programmatic deficiencies that included training. A follow-up formal assessment was conducted in April 2007, concluding that significant improvements in contractor NDA programmatic structure and training had occurred. CNS staff participated in both of these reviews.

3.1.2 Status

Continuous improvement with *in situ* NDA is warranted to support nuclear safety in the handling of fissile material at the Department defense nuclear facilities. Secretary Bodman accepted Recommendation

2007-1, assigning the Chief of Nuclear Safety as the Department's responsible manager for developing the Implementation Plan (IP). The approach that the IP team will take, consistent with Integrated Safety Management System principles is to:

- Evaluate the condition of *in situ* NDA programs against evaluation criteria, which will be developed;
- Identify state of the practice, both commercial as well as within the Department, in training and qualification, design requirements for new facilities and equipment, standards for conducting *in situ* NDA, implementation of standards, and oversight;
- Identify any relevant ongoing research and development activities;
- Identify what is needed and any resulting gaps in personnel capabilities and training, equipment capabilities, policy and directives, and oversight;
- Establish requirements, programs, and guidance, as needed; and
- Develop a prioritized plan for implementing the above criteria and requirements.

The IP will be developed to support line oversight and be consistent with current Departmental initiatives. Site reviews will be integrated into existing oversight schedules using criteria review and approach documents (CRADs) tailored as appropriate for specific sites. The IP framework will use existing industry standards to the extent possible to develop specific contract language as well as modifications to DOE Order 420.1B, Nuclear Facility Safety.

3.1.3 Plans for Next Quarter

The IP team kick-off meeting was held on June 28, 2007 to discuss strategy, plan of action, and roles and responsibilities, and to initiate actions toward timely IP completion, due in September 2007.

3.2 Nuclear Quality Assurance Standards and Auditor Training

3.2.1 Background

NQA Lead Auditor training prepares personnel to conduct audits of DOE and its contractors against the DOE QA requirements and national standard ASME NQA-1-2004, *Quality Assurance Requirements for Nuclear Facility Applications*. The training course is a required element of formal CNS nuclear quality assurance auditor certification. Completion of the training will improve the capability of federal personnel to oversee contractor quality program implementation.

3.2.2 Status

CNS-sponsored NQA Lead Auditor training has received strong interest from headquarters and field personnel. To date, one course has been completed. During the first session, it became apparent that site and headquarters program personnel have a need for clear direction on how to specify applicability of the NQA-1 standard in contracts and how to evaluate the contractor's QA Program relative to adoption of NQA-1. A related issue surfaced regarding the appropriate application of Parts I-IV of NQA-1.

3.2.3 Plans for Next Quarter

The second NQA Lead Auditor training session scheduled for July 16-20 is fully booked and the third session on August 13-17 is overbooked. Plans are underway to satisfy the field requests for training 60-100 personnel during FY08 and FY09. Sites requesting the training include: Savannah River, Cincinnati Consolidated Business Center, and Oakland. Therefore, a CNS budget to offer this training at multiple field locations is being developed. The Office of River Protection and Richland Operations have decided

to jointly contract with a different provider for a similar course. They will train 45 federal staff during August and September.

3.3 Energy and Science Software Quality Assurance Support Group

3.3.1 Background

EM, NE, and SC formed the Software Quality Assurance Support Group (SQA SG) to provide a mechanism for their federal assurance professionals supporting line management to be technical resources for SQA matters, to promote consistent line SQA oversight programs, and to assist in field implementation of DOE SQA requirements. CNS staff leads this group.

3.3.2 Status

A white paper is being developed to aide SQA federal assurance professionals in their oversight of safety software, to help determine whether software used by DOE contractors and field offices is safety software (per DOE O 414.1C) or not. Site SQA representatives articulated the immediate value of this information, which was used during a site assist visit to Pacific Northwest National Laboratory. Also, the SQA SG charter was agreed upon by CNS, EM, NE, and SC SQA lead representatives.

3.3.3 Plans for Next Quarter

The safety software determination white paper is due to complete in September. With charter agreement complete, the Chair and Vice-Chair should be appointed in August. Implementation of the SQA SG web site is expected in September.

4.0 ONGOING ACTIVITIES

4.1 Early Integration of Safety into Design

4.1.1 Background

The Department has a number of major projects at various stages of design, construction, operation, and decommissioning throughout the complex. For Hazard Category 2 nuclear facilities, it is crucial to identify the hazards and select appropriate safety controls early in the design phase to eliminate delays and costly safety-related re-design in later project phases. The CNS is providing support in the development of DOE's safety and project management directives to assure early integration of safety into design.

4.1.2 Status

CNS continues to support the development of DOE's safety and project management directives to assure early integration of safety into design. CNS staff has completed its RevCom review of DOE-STD-1189, *Integration of Safety into the Design Process*, which provides the Department's expectations for incorporating safety-in-design in new or major modifications to DOE hazard category 1, 2, and 3 nuclear facilities. CNS staff comments focused on ensuring that hazard and accident analysis are performed early in the design process to conservatively determine the types of safety controls, adequacy of DOE technical capabilities in overseeing the contractor's work, and quality assurance. CNS recommended designating a Chief Engineer for larger projects who would be responsible for certification of the design and resolving issues on very large projects (hazard category 2). Once the RevCom comments are resolved, the final Standard will be released to support the implementation of DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, July 2006.

CNS staff also reviewed a preliminary draft of DOE-STD-1104, *Review and Approval of Nuclear Facility Safety Basis and Safety-in-Design Documents*. CNS staff comments focused on proper definition of DOE review and approval of safety and design documents. Again, CNS promotes the establishment of a dedicated and designated Chief Engineer working for the Federal Project Director for larger/Hazard Category 2 projects who would be responsible for resolving technical issues and for design certification.

CNS staff is assisting in the development of the implementation guides for DOE O 413.3A. For the guide on EM Cleanup Projects, the CNS staff has developed draft guidance on the integration of environment, safety and health process and documentation into the project Critical Decision process. Guidance on how to apply integrated safety management system for EM D&D and environmental restoration projects has also been developed.

In June, CNS staff assisted the OECM External Independent Review (EIR) team in conducting an onsite review on the SWPF project at Aiken SC. The EIR purpose was to validate that the SWPF project can be executed to the proposed performance baseline (scope, cost, and schedule) for Critical Decision-2/3A approval. The CNS staff supported the EIR in the safety areas through document reviews and interviews, and provided safety advice to the EIR safety subteam leader. The EMAAB and ESAAB are scheduled for September 2007 to request CD-2/3A approval from EM-1 and the Deputy Secretary.

CNS staff also participated in the annual EFCOG Safety Analysis Working Group Workshop, whose purpose was to promote excellence in the DOE safety analyses programs through information sharing and application of lessons-learned. CNS staff participated in a panel discussion on the current challenges to supporting excellence in operations through safety analysis and attended the Safety Basis Subgroup meeting which discussed issues related to the implementation of Justifications for Continuing Operations, a recent issue raised by the DNFSB.

4.1.3 Plans for Next Quarter

CNS staff will continue its involvement in the development and finalization of DOE-STD-1189, DOE-STD-1104, and the DOE O 413.3A implementation guides. As part of our operational awareness activities, CNS staff will begin field reviews on the implementation of DOE O 413.3A and DOE-STD-1189 at major nuclear projects. The Staff will help ensure that safety considerations are being integrated into new design and construction projects. CNS staff efforts will continue to include the review of contract language, qualification of project safety personnel, safety basis documents and programs, authorization agreements, engineering analyses, and quality assurance. Also, CNS staff will also work with EM to derive lessons-learned from the Department of Defense to improve our acquisition processes, including technology integration.

4.2 Seismic Design Process Review

4.2.1 Background

Nuclear facilities that process, store, or handle radioactive materials in a form and quantity that pose potential nuclear hazards to the workers, the public, or the environment require additional rigor in design. The adequacy of the seismic design of some facilities, such as the Waste Treatment Plant and the Salt Waste Processing Facility has caused significant Project Management issues for the Department. For this purpose, the CNS conducted a Seismic Decision Process Review and Lessons Learned Meeting to provide expert advice to DOE Managers to ensure that the design of nuclear facilities is consistent at the appropriate level of risk to meet DOE mission and safety goals.

The Seismic Lessons Learned Meeting output will identify improvements for the for Hazard Category 2 nuclear facilities to be included in future contracts requiring design work. The group of seismic experts will also conduct independent peer reviews for Seismic Design Category 3 Nuclear Facility Projects as required by industry standards. A review of seismic design methodologies and practices being used at different EM sites will also be conducted to recommend improvements in processes currently utilized. Finally, this Panel will provide input to a DOE risk policy that addresses the differences in methodologies and the adoption of the ANS and ASCE standards that DOE utilizes in the design. If necessary, the Panel will provide recommendations on exemptions to the CNS in support of the Central Technical Authority's risk-informed decision making process.

4.2.2 Status

The CNS is continuing to review the current seismic design process for the Department.

4.2.3 Plans for Next Quarter

The panel is scheduled to convene August 2-3, 2007. The CNS will seek endorsement of the draft charter and will continue to work with the Office of Environmental Management (EM) to prioritize activities for the Panel which will meet at least quarterly. The first day of the session will involve internal discussion and training; the second day will be open to the public.

4.3 Waste Treatment Plant (WTP) Quality Assurance (QA) and Seismic Certification

4.3.1 Background

DOE is constructing the Waste Treatment Plant (WTP) at the Hanford Site in Washington to convert high level radioactive waste into a vitrified form suitable for deposit at Yucca Mountain. The project design-build contractor, Bechtel National (BNI), is managed by the DOE Office of River Protection (ORP) in Richland, WA, and the Office of Project Recovery (EM1.1) in headquarters. The WTP project has suffered a series of quality issues and major cost/schedule overages throughout the last few years. The CNS is supporting EM-1.1 and ORP in their efforts to improve the implementation of BNI's quality assurance program and DOE's ability to oversee BNI.

4.3.2 Status

CNS staff participated as an advisor for the EM 60 QA Evaluation of the WTP which was the first of seven evaluations to be performed by EM across its major projects. This evaluation reviewed BNI and ORP QA Programs related to ASME NQA-1-2004 and other pertinent QA requirements. The evaluation identified 28 compliance and observation items, grouped and prioritized into five areas: 1) organization; 2) software; 3) design; 4) incomplete or inconsistent implementation of procedures; and 5) overall QA program. The two highest significance items related to organizational structures and available resources in the QA programs for both BNI and ORP, and the lack of proper validation of BNI proprietary interface software.

CNS staff are also ensuring the resolution of the WTP Integrated Control Network quality concerns identified by the DOE Inspector General and Office of Price Anderson Enforcement (OE). The ORP response to Congressman Wyden was also used by the IG to close their review. The potential nuclear safety rule violations will be evaluated by OE in an upcoming Enforcement Conference.

ORP is making progress in addressing severe shortages in staff qualified to oversee BNI and Tank Farms quality assurance program implementation. ORP has hired two staff members to fill open quality

engineer positions and obtained additional contractor services. There still remains a need to identify a senior position of QA Manager reporting to the ORP Manager.

4.3.3 Plans for Next Quarter

CNS staff will continue to place a significant amount of resources to support EM and ORP activities necessary to continue positive change in the WTP QA Program. An assessment of the ORP oversight program will be conducted by CNS staff in December.

4.4 Draft DOE Order 410.1 "CTA Responsibilities Regarding Nuclear Safety Requirements"

4.4.1 Background

The need for a DOE Order to identify minimum nuclear safety requirements for nuclear facility contracts and establish the CTA and CNS/CDNS responsibilities became apparent to support the changes in Headquarters' management structure required by DNFSB Recommendation 2004-1. The CNS in conjunction with the CDNS drafted DOE O 410.1, *CTA Responsibilities Regarding Nuclear Safety Requirements*, to clearly establish CTA and CNS/CDNS authorities and responsibilities.

4.4.2 Status

Headquarters organizations have submitted their concurrence on the final draft of O 410.1, DNFSB staff has issued their letter to DOE stating they have "no further comments," and the CTAs have concurred. Order 410.1 is in the final stages for Deputy Secretary approval and issuance as a DOE directive. Several directives have been reviewed by CNS staff using the draft Order. Additionally, two new contract "Requests for Proposal" (RFP) were reviewed. The RFPs cover the Office of River Protection Tank Operations and Richland Operations Plateau Remediation contracts. Several issues were provided to the Office of Procurement Management and responsible Site Offices to better address nuclear safety requirements.

4.4.3 Plans for Next Quarter

CNS staff will work with EM, NE and SC to prepare to implement the Order.

4.5 Nuclear Safety Requirements Performance Criteria for Contracts

4.5.1 Background

A review of DNFSB correspondence for major EM projects was performed to identify significant areas in major projects that were not meeting design expectations with regard to nuclear safety. Building upon the Interim Design Guidance issued by EM in July 2006, the CNS developed draft Performance Requirements for Nuclear Safety Design for Hazard Category 2 Facilities. This language is intended to strengthen the contract expectations for Requests For Proposals to more accurately estimate costs for Hazard Category 2 nuclear facilities.

4.5.2 Status

After reviewing contracts for the Waste Treatment Plant, the Salt Waste Processing Facility, and other DOE facilities, CNS determined that in several cases, contract language was lacking nuclear safety design expectations in the contracts. The proposed Performance Criteria identifies conservative approaches to the major nuclear safety features (Safety Analysis, Natural Phenomena Hazards, Confinement, Fire Protection, Criticality Safety, Quality Assurance, Electrical, and Radiation Protection) required by DOE O 420.1B, Facility Safety for Hazard Category 2 facilities. These conservative expectations are intended

to facilitate more accurate cost estimates to baseline nuclear projects. This could also help define the outline for the Safety Design Strategy as one means to implement DOE STD 1189. The development of conservative estimates with technical proposals for alternatives will help DOE managers make better risk-informed decisions with respect to nuclear projects.

4.5.3 Plans for Next Quarter

During the next quarter, CNS staff will ensure appropriate peer review of the Performance Criteria and work with EM and MA to refine such language into a readily-usable set of options for future contracts.

4.6 DNFSB Recommendation 2004-2 Active Confinement Systems

4.6.1 Background

On December 7, 2004, the Defense Nuclear Facilities Safety Board unanimously approved Recommendation 2004-2, Active Confinement Systems, which addresses the confinement of hazardous materials at defense nuclear facilities in the Department of Energy (DOE) complex.

DOE's Implementation Plan (IP) for this recommendation included the requirement for site offices to complete facility-specific evaluation reports and the established Independent Review Panel (IRP) to complete reviews for selected facilities. Site offices are to engage both the IRP and the CTA early in the evaluation process to ensure that the Data Collection Tables (Ventilation System Evaluation Guidance document Table 4.3) properly specify applicable attributes (i.e., SC, SS, DID) for listed facilities based on the Documented Safety Analysis assumptions. This engagement and consultation is to assure consistent application and specification across DOE sites.

4.6.2 Status

Evaluations for EM High Priority Facilities were completed on June 6, 2007 in accordance with the Recommendation IP meeting the requirement to complete these evaluations 90 days after completion of the revised Ventilation System Evaluation Guidance.

4.6.3 Plans for next Quarter

During the next quarter CNS staff will continue to evaluate EM field submittals as well as IRP recommendations for the remaining medium priority facilities/activities due for completion by September 6, 2007.

5.0 COMPLETED ACTIVITIES

5.1 Development of DOE Standard 1027 (Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23 Nuclear Safety Analysis Reports) Guidance and Review of Miscellaneous Standards and Manuals

5.1.1 Background

In a letter to DOE dated June 26, 2006, the DNFSB identified a lack of clarity in aspects of DOE Standard 1027 (Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23 Nuclear Safety Analysis Reports), as well as inconsistencies in DOE sites' interpretation and application of the ground rules described in the standard. Three issues identified by the DNFSB are: (1) sealed source exemptions, (2) applicability of criticality controls, and (3) the technical basis for Hazard

Category 3 threshold quantities. A working group comprised of both DOE and contractor staff collaborated in the development of supplemental guidance to address the DNFSB areas of concern.

Also, DOE Standard 1183, "Nuclear Safety Specialist Functional Area Qualification Standard," and DOE M 460.2-1A, "Radioactive Material Transportation Practices Manual," were revised.

5.1.2 Status

Initially, CNS did not concur with the proposed supplemental guidance for DOE-STD-1027 due to technical and programmatic concerns. Technical concerns include: exclusion of Type B containers from facility inventory; use of segmentation/nature of process approaches only during the final hazard categorization phase; and application of criticality safety controls in less than Hazard Category 2 facilities. The Type B container issue is being worked out with new wording to be included in the proposed guidance document. The programmatic concern is HSS-issuance of guidance without going through the directives process. However, CNS and CDNS reached agreement with the HSS-lead that the proposed guidance would be provided to the CTAs for their use as appropriate.

Regarding DOE Standard 1183, CNS staff comments regarded enhancing rigor and content of required technical competencies; duties and responsibilities; and background and experience, intended to ensure that valuable highly qualified personnel were not inadvertently being excluded based solely on educational history without regard to high-reliability operational and educational experience.

Regarding DOE M 460.2-1A, CNS staff comments regarded ensuring that transuranic waste managed by the Waste Isolation Pilot Plant (WIPP) and that depleted Uranium to be handled by the proposed Depleted Uranium Hexafluoride (DUF6) facilities at Portsmouth and Paducah are adequately covered.

5.1.3 Plans for Next Quarter

None – these efforts are complete.

APPENDIX A
QUARTERLY ACTIVITY REPORT FOR OFFICE OF CHIEF NUCLEAR SAFETY
April 1, 2007, through June 30, 2007

Field support and oversight activities by members of the Office of the Chief of Nuclear Safety from April 1, 2007 to June 30, 2007 include:

Site	Facility or Activity	Dates	Functional Area
OFFICE OF ENVIRONMENTAL MANAGEMENT			
Hanford			
	Office of River Protection Quality Assurance Evaluation	5/7 – 5/11/2007	Quality Assurance
	Office of River Protection Tank Farms Software Quality Assurance (SQA) Assessment	6/18 -6/22/2007	Software Quality Assurance
PPPO			
	Status Review of Depleted Uranium Hexafluoride Conversion Project - EM-60 Sponsored Site Visit	4/24 – 4/26/2007	Project Status Review
SRS			
	Type 2 DOE-SR assessment	3/28 – 3/29/2007	Quality Assurance – Software/CNS Liaison
	SWPF External Independent Review	6/18 – 6/22/2007	Project Acquisition External Independent Review for CD-2/3A approval
West Valley			
	DOE Programs Management Assessment	June 4-7, 2007	Program Assessment
OFFICE OF NUCLEAR ENERGY			
Idaho			
	Advanced Test Reactor (ATR) Life Extension Project Oversight Visit	4/16 – 4/19/2007	Safety Basis and Design Basis Review
	Advanced Fuel Cycle Facility - Glovebox Operational Readiness Review	5/15 – 5/18/2007	Operational Readiness Review

Site	Facility or Activity	Dates	Functional Area
	3rd Quarter Criticality Safety Review of AMWTP and Site Contractors	5/21 – 5/24/2007	Criticality Safety
PROGRAM OFFICES			
HQ			
	Defense Nuclear Facility Safety Board (DNFSB) Staff Meeting on the DOE Nuclear Criticality Safety Program (NCSP) Annual Report	4/5/2007	Nuclear Criticality Safety
	ASME Committee on Nuclear Quality Assurance	4/17 – 4/19/2007	Quality Assurance
	International Atomic Energy Agency (IAEA) Consultants Technical Meeting	5/12 – 5/18/2007	
	EFCOG Safety Analysis Working Group Workshop	5/20 – 5/24/2007	Safety Basis Activities
	Office of Science Internal Procedure Development related to Operational Readiness, Nuclear Safety and Delegation of Authority	5/15/2007	
	DOE 2007 Facility Representative Workshop, Las Vegas NV	5/15 – 5/17, 2007	
	Tritium Focus Group Spring Meeting , Los Alamos NM	6/12 - 6/14, 2007	
	American Nuclear Society Annual Meeting	6/23-6/29/2007	Criticality Safety
OFFICE OF SCIENCE			
Brookhaven			
	Brookhaven Graphite Research Reactor Decontamination and Decommissioning Workshop (EM activity at a multi-mission SC led site)	5/9 – 5/10/2007	

Site	Facility or Activity	Dates	Functional Area
Hanford			
	PNNL Safety Basis Bldg. 325	6/22/07	HQ Safety Basis Review for ESAAB
	PNNL Software Quality Assurance (SQA) Assessment	6/4 – 6/7/2007	Software Quality Assurance
	PNNL Site Assist Visit	6/20/2007	Site Assistance
Oak Ridge			
	High Flux Isotope (HFIR) Operational Readiness Review	4/9 – 4/19/2007	Operational Readiness Review
	Technical Assessment of the Bechtel Jacobs Company, LLC Nondestructive Assay Program at the K25/K27 Project (EM activity at a multi-mission SC led site)	4/20/2007	NDA Program
	K 25 Decontamination & Decommissioning Project and Molten Salt Reactor Experiment Walkdowns (EM activity at a multi-mission SC led site)	4/30 – 5/2/2007	Project Review
	EM-60 Integrated Safety Management Program Oak Ridge Operations Office Environmental Management Assessment (EM activity at a multi-mission SC led site)	6/11 - 6/14, 2007	Management Assessment
New Brunswick Laboratory			
	Nuclear Criticality Safety Evaluation of Operations with Fissionable Material in the New Brunswick Laboratory	5/1/2007	Criticality Safety

Site	Facility or Activity	Dates	Functional Area
STAFF ACTIVITIES			
HQ	SRS Assessment Training Course	June 4-7, 2007	Training
	NQA-1 Auditor Training Course	June 11-15, 2007	Training
	DOE Transportation and Traffic Management Executive Overview for EM Managers Training Course	June 18-20, 2007	Training
	STSM Overview	June 25 - 29, 2007	Training

SEPARATION


PAGE



The Under Secretary of Energy
Washington, DC 20585

October 16, 2007

MEMORANDUM FOR THE SECRETARY

FROM: C. H. ALBRIGHT, JR. 

SUBJECT: FULL IMPLEMENTATION OF THE CENTRAL
TECHNICAL AUTHORITY FUNCTION WITHIN THE
UNDER SECRETARY OF ENERGY COMPLEX

REFERENCE: Revision 2 of U.S. Department of Energy Implementation Plan
for Defense Nuclear Facilities Safety Board (DNFSB)
Recommendation 2004-1

This memorandum documents that the Office of the Under Secretary of Energy has fully implemented the Central Technical Authority (CTA) function. This letter satisfies commitment 3 of the referenced Implementation Plan for DNFSB Recommendation 2004-1. This memorandum describes how each of the seven core CTA responsibilities are implemented and how the eight elements of the Department's plans for implementing the CTA have been addressed.

Core Functions, Responsibilities and Authorities of the CTA: The functions, responsibilities, and authorities of the CTA are provided in DOE Manual M411.1-1C, *Safety Management Functions, Responsibilities, and Authorities Manual*. The attached matrix indicates how each of the seven CTA core responsibilities as established by the Secretary in a memorandum dated April 26, 2005 has been implemented.

Implementation for Cultural Institutionalization: The 2004-1 IP identifies eight aspects of the Department's plan to implement the CTA. Each of these aspects is addressed in the attached matrix.

CNS Performance and Accomplishments over the past quarter are included in the attachment, *Staff Activities for the Office of the Chief of Nuclear Safety Supporting the Under Secretary of Energy and the Under Secretary for Science, Report 2007- 2, April 1, 2007, to June 30, 2007*.

Summary: The CTA function for Energy has been fully implemented. The CTA/CNS organization is dynamic and its roles, responsibilities, and proactive initiatives will continue to evolve as the Department's organizational roles and responsibilities change. The Energy CTA/CNS will periodically conduct self-assessments and take action for continuous improvement as warranted.

cc: Clay Sell, Deputy Secretary
Mark Whitaker, Departmental Representative

