U.S. Department of Energy	Subject: Federal Assurance Capability Plan Inspection Criteria and Approach, DNFSB 2004-1, Commitment 16	HS: HSS CRAD 64-40 Rev: 0 Eff. Date: 02/11/2009
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1.0 PURPOSE

Within the Office of Independent Oversight, the Office of Environment, Safety and Health (ES&H) Evaluations' (HS-64) mission is to assess the effectiveness of those environment, safety and health systems and practices used by field organizations in implementing Integrated Safety Management and to provide clear, concise, and independent evaluations of performance in protecting our workers, the public, and the environment from the hazards associated with Department of Energy (DOE) activities and sites. A key to success is the rigor and comprehensiveness of our process; and as with any process, we continually strive to improve and provide additional value and insight to field operations. Integral to this is our commitment to enhance our program. Therefore, we have revised our Inspection Criteria, Approach, and Lines of Inquiry for internal use and also we are making them available for use by DOE line and contractor assessment personnel in developing and implementing effective DOE oversight and contractor self-assessment and corrective action processes on this WEB page.

2.0 APPLICABILITY

The following Inspection Criteria document is approved for use by the Office of ES&H Evaluations.

3.0 FEEDBACK

Comments and suggestions for improvements on these Inspection Criteria, Approach, and Lines of Inquiry can be directed to the Director of the Office of ES&H Evaluations on (301) 903-5392.

Federal Assurance Capability Review Plan

Background: In May 2004, the Defense Nuclear Facility Safety Board (DNFSB) recommended that several actions be taken by DOE and the National Nuclear Security Administration (NNSA) to provide increased assurance of safety at defense nuclear facilities. (See DNFSB Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations.)* In response to this recommendation, DOE developed and implemented an *Implementation Plan to Improve Oversight of Nuclear Operations*. This plan includes a commitment (Commitment #16) to verify Federal safety assurance capability and assigns the Chief Health, Safety and Security Officer (HS-1) the responsibility for performing an effectiveness review of actions taken to establish a robust Federal assurance capability. HS-1 has assigned HS-64, as the Office of Health, Safety and Security (HSS) organization, with primary responsibility for Independent Oversight of safety, to develop the plan and perform the effectiveness review.

Purpose: To provide a plan, including criteria, approaches, and the lines of inquiry, to be used for assessing the effectiveness of areas relating to the establishment of a robust Federal assurance capability.

Scope: The review plan covers all areas in Section 5.1 of the DOE Implementation Plan (IP) except for Section 5.1.3, *Instituting a Nuclear Safety Research Function*, which is not ready for review. HS-1 will develop a plan and conduct a review of Section 5.1.3 implementation after commitments in this area are reported as complete.

Overall Approach: HS-64 will review performance to determine if actions specified in the DOE Implementation Plan have been taken and to assess the effectiveness of these actions. A number of the criteria and lines of inquiry specified in the plan are the same as, or similar to, those used by HS-64 for routine ES&H inspections. Where this is the case, HS-64 will perform the specified review during upcoming routine ES&H inspections and/or will use the results of recent inspections to provide perspectives on effectiveness. HS-64 will collect data through various means (e.g., interviews or focused special reviews) when the areas to be reviewed are outside the scope of its routine inspection program. At the conclusion of these reviews, HS-64 will prepare a report summarizing the extent to which plans and commitments developed by DOE in response to DNFSB Recommendation 2004-1 have been implemented and providing the HS-64 evaluation of their effectiveness in achieving the intended improvements in nuclear safety.

Instituting Central Technical Authorities (IP Section 5.1.1)

Introduction

DNFSB Recommendation 2004-1 includes a recommendation that DOE and NNSA take steps to empower a central and technically competent authority responsible for operational and nuclear safety goals, expectations, requirements, standards, directives, and waivers. DOE developed an *Implementation Plan to Improve Nuclear Operations* in response to Recommendation 2004-1. Section 5.1.1 of the DOE Plan identifies three commitments and a number of planned actions for instituting central technical authorities (CTAs) for addressing this recommendation. The status of each of the three commitments has been reported as "Complete."

Approach

HS-64 will review steps taken by DOE and NNSA to institute CTAs to determine if commitments made to the DNFSB in this area have been met and to assess the effectiveness of actions taken. Specific areas of review are as follows:

1. Review deliverables to confirm completion of Commitments 1, 2 and 3 identified in Section 5.1.1 of *DOE Implementation Plan to Improve Nuclear Operations, Revision* 2.
2. Review the Department's Functions, Responsibilities, and Authorities Manual (FRAM) to determine if CTA responsibilities listed in the *DOE Implementation Plan* have been clearly assigned and regularly updated to reflect changes in organizations, functions, and processes.
3. Review records and procedures and past Independent Oversight inspection reports and program office self-assessments to assess the extent to which CTA responsibilities have been carried out. Coordinate with essential system functionality inspectors to identify areas for review where performance deficiencies are apparent. Coordinate with inspectors reviewing DOE feedback and improvement programs to determine if these programs provide CTAs with sufficient operational awareness. Review corrective action plans for identified deficiencies to determine their scope and status. Review staffing levels and qualifications to provide insights on adequacy of support to CTAs.
4. Review procedures and records to assess the extent to which the plans listed in the *DOE Implementation Plan* for full implementation of the CTA role have been carried out and to determine if the status of implementation is consistent with the reported completion status for Commitments 1, 2 and 3.

This area will be included within the scope of scheduled ES&H inspections at Pantex, Savannah River, and Lawrence Livermore during calendar year 2009. Inspection results will be detailed in an identifiable section (e.g., an appendix) to inspection reports and a summary report will be issued in 2010.

Criteria

Section 5.1.1 of the *DOE Implementation Plan to Improve Nuclear Operations, Revision 2 (in response to DNFSB Recommendation 2004-1)* specifies the following commitments and deliverables:

- Commitment 1: Formally establish the CTAs (as described above). Deliverable for Commitment 1: Secretarial memo identifying the CTAs and their roles and responsibilities.

- Commitment 2: Provide adequate technical support for the CTAs (as described above). Deliverable for Commitment 2: Letter report from each of two CTAs with responsibilities for defense nuclear facilities to the Secretary declaring the CTA has adequate technical support and providing the basis for this declaration.

- Commitment 3: Fully implement the CTA function (as described above). Deliverable for Commitment 3: Letter report from each of two CTAs with responsibilities for defense nuclear facilities to the Secretary declaring the CTA function fully implemented and providing the basis for this declaration (NNSA report requires NNSA Administrator's concurrence).

Section 5.1.1 states that the CTAs are line management executives who will be responsible for the following core nuclear safety functions for their organizations and facilities:

- Concurs with the determination of the applicability of DOE Directives involving nuclear safety included in contracts pursuant to DEAR 970.5204-2(b);
- Concurs with nuclear safety requirements included in contracts pursuant to DEAR970.5204-2(c);
- Concurs with all exemptions to nuclear safety requirements in contracts that were added to the contract pursuant to DEAR 970.5204-2;
- 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;
- 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);
- Periodically reviews and assesses whether DOE is maintaining adequate numbers of technically competent personnel necessary to fulfill nuclear safety responsibilities; and
- Provides inputs to, reviews, and concurs with DOE-wide nuclear safety-related research and development activities.

Section 5.1.1 further states that to fully implement the CTA role, the Department plans to:

- Define the detailed functions, responsibilities, and authorities for the CTAs;
- Update the Department's FRAM and Program Office Functions, Responsibilities, and Authorities (FRA) documents to reflect the CTAs' functions, responsibilities, and authorities;
- Complete a staffing analysis for technical experts necessary to support CTAs;
- Fill the positions for supporting technical experts;

- Define technical qualifications of the CTA and of the CTA support staff, including the NNSA Chief of Defense Nuclear Safety, and the Energy Chief of Nuclear Safety. Where technical qualifications are not met, corrective or compensatory actions will be taken;
- Define the processes and protocols for fulfilling the CTA roles and responsibilities. For example, the specifics on how and when the CTAs must be involved in the process for granting exemptions to nuclear safety rules and orders need to be finalized, considering existing processes that require approval of the program line managers and the Office of Primary Interest;
- Describe how the CTAs will interface with other organizations (for example, Office of Enforcement, field elements, and program offices); and
- Establish an operating budget for fulfilling CTA duties.

Lines of Inquiry

1. Do the deliverables referenced by the *DOE Implementation Plan* support that Commitments 1, 2, and 3 have been met?

2. Are CTA responsibilities for the following functions clearly assigned in the Department's FRAM?
   - Concurs with determination of applicability of DOE directives and other safety requirements involving nuclear safety included in contracts;
   - Concurs with all exemptions to nuclear safety requirements in contracts that were added to the contract pursuant to DEAR 970.5204-2;
   - 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;
   - 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);
   - Periodically reviews and assesses whether DOE is maintaining adequate numbers of technically competent personnel necessary to fulfill nuclear safety responsibilities; and
   - Provides inputs to, reviews, and concurs with DOE-wide nuclear safety-related research and development activities.

3. Have CTAs effectively carried out the above responsibilities? Specifically:
   - Do records indicate that CTAs concurred in the granting of exemptions or in the "tailoring" of nuclear safety contractual requirements?
   - Have CTAs provided sufficient procedures, processes, and guidance for implementing nuclear safety requirements?
   - Do CTAs participate in the review of Documented Safety Analyses, Authorization Agreements, and readiness reviews as necessary to evaluate the adequacy of safety controls and implementation?

- Does review of headquarters and field element feedback and improvement programs pursuant to HSS Criteria Review and Approach Documents HSS CRAD 64-21 and HSS CRAD 64-22, indicate that these programs are adequate to provide CTAs with appropriate operational awareness?
- Do interviews and records of periodic reviews and indicate that DOE is maintaining adequate numbers of technically competent personnel to fulfill nuclear safety responsibilities?

4. Have the plans described in the *DOE Implementation Plan* to fully implement the CTA role been carried out? Specifically:
   - Has a staffing analysis been completed for technical experts necessary to support CTAs?
   - Have the positions for supporting technical experts been filled?
   - Have technical qualifications of the CTA and of the CTA support staff (including the NNSA CDNS, and the Energy CNS) been defined? Where technical qualifications are not met, have corrective or compensatory actions been taken?
   - Have processes and protocols for fulfilling the CTA roles and responsibilities been defined? Do these processes and protocols include specifics on how and when the CTAs must be involved in granting exemptions to nuclear safety rules? Do they describe how the CTAs will interface with other organizations (for example, Office of Enforcement, field elements, and program offices)?
   - Has an operating budget for fulfilling CTA duties been established?
   - Has the number of technically capable personnel been periodically reviewed and assessed to determine if it is adequate to fulfill nuclear safety responsibilities and authorities?
   - Do CTAs periodically monitor, participate, and review the results of field oversight organization oversight and other information for high consequence nuclear operations to maintain operational awareness and to ensure the Department's nuclear safety policies and requirements are adequate and properly maintained?
   - Do documented oversight program plans and schedules address the role of the CTAs and their support staff?

Providing Effective Federal Oversight (IP Section 5.1.2)

Introduction

As described in the IP, one of the underlying issues needing resolution in strengthening Federal safety assurance is that the Department must provide effective Federal safety oversight to ensure it fulfills safety responsibilities at all levels of the Department. The Department's previous Oversight Policy, P 450.5, had not been consistently and effectively implemented throughout the DOE organization. The Resolution Approach to this issue provided a description of the Department's four-tier broad-based oversight model. To implement this model, the Department committed to issue DOE Policy 226.1, *Department of Energy Oversight Policy,* and DOE Order 226.1, *Implementation of Department of Energy Oversight Policy*, which were issued in June and September 2005, respectively (thereby closing IP Commitment 4). DOE Order 226.1 was revised in July 2007 to its current revision, 226.1A. This review will focus on the overall effectiveness of DOE Headquarters and field office implementation of Policy 226.1 and Order

226.1A. In the IP, the Department also committed to issuing an associated Oversight Guide (IP Commitment 5). Specifically, the Department committed to drafting the guide by February 1, 2008 (Commitment 5a) and issuing the guide by January 1, 2009 (Commitment 5b). This commitment is overdue, as the guide has not yet been drafted. HS-1 will develop Criteria Review and Approach Documents (CRADs) and conduct a review of Commitment 5 implementation after the guide is issued.

Criteria

DOE Headquarters and field line management have established and implemented an effective set of requirements that govern Federal oversight processes. DOE oversight programs and processes are in accordance with the policy and key elements outlined in DOE Policy 226.1, *Department of Energy Oversight Policy* and DOE Order 226.1A, *Implementation of Department of Energy Oversight Policy.*

Approach

Include the reviews of Federal oversight effectiveness as part of the ongoing HS-64 Independent Oversight inspection program for CY 2009. A summary report of the results of the oversight inspections of DOE Policy 226.1 and Order 226.1A implementation will be issued in 2010. The report will address past results from CY 2007 and 2008 inspections as well planned inspections in CY 2009 to provide a broad sample of Federal oversight effectiveness as indicated by the extent of DOE Policy 226.1 and Order 226.1A implementation across the complex.

Lines of Inquiry

HSS CRAD 64-22, *Feedback and Continuous Improvement Inspection Criteria and Approach – DOE Headquarters*, and HSS CRAD 64-21, *Feedback and Continuous Improvement Inspection Criteria and Approach – DOE Field Element*, provide a comprehensive set of CRADs to address Federal oversight effectiveness and should be used for this review. The following lines of inquiry are also provided to better facilitate data collection and reporting to support the year-end report described in the review approach above:

- Are the DOE Headquarters and field element line management oversight programs, plans, processes and schedules compliant with DOE O 226.1A?
- Has DOE Headquarters and field element line management elements documented the degree of compliance through self-assessments and/or gap analyses?

Establishing Clear Roles, Responsibilities and Accountabilities (IP Section 5.1.4)

Introduction

DNFSB Recommendation 2004-1 includes a recommendation that delegation of authority for nuclear safety matters to field offices and contractors be contingent upon the development and application of associated criteria and implementing mechanisms. Section 5.1.4 of the *DOE Implementation Plan to Improve Nuclear Operations* identifies two commitments and a number

of planned actions for strengthening delegations of authority. The status of the two commitments has been reported as "Complete."

Approach

HS-64 will review steps taken by DOE and NNSA to develop and apply a more rigorous process for delegation of responsibilities and authorities. Review will include the following:

- Review of documents identified as deliverables to confirm completion of commitments 9 and 10 identified in Section 5.1.4 of *DOE Implementation Plan to Improve Nuclear Operations, Revision* 2.
- Review the process for delegation of authority and responsibilities to determine if it contains the elements specified in Section 5.1.4 of *DOE Implementation Plan to Improve Nuclear Operations, Revision* 2.
- Review the FRAM to determine if responsibilities for implementing requirements for delegation of authority are adequately addressed.
- Review of a sample of delegations to determine if the delegation process has been effectively implemented.

This area will be included within the scope of ES&H inspections that are scheduled to be conducted at Pantex, Savannah River, and Lawrence Livermore during calendar year 2009. Inspection results will be detailed in an appendix to the inspection report for each of these sites and a summary report will be issued in 2010.

Criteria

Section 5.1.4 of the *DOE Implementation Plan to Improve Nuclear Operations, Revision 2 (in response to DNFSB Recommendation 2004-1)* specifies the following commitments and deliverables:

- Commitment 9: Define and implement the process and criteria for delegating authorities to field personnel for fulfilling assigned safety responsibilities, and for performing periodic self-assessments on assignment of responsibilities and authorities to headquarters personnel. Deliverable A for Commitment 9: Process definition and criteria, approved by the Deputy Secretary. Deliverable B for Commitment 9: Report to the Secretary on review activities to evaluate implementation of the processes and criteria for delegating authorities to field personnel for fulfilling safety responsibilities, and to determine whether all existing delegations of authority to the DOE Field Offices have been and are being made using these new processes and criteria. Deliverable C for Commitment 9: Approved biennial program office self-assessments of safety function assignment at the program office level.
- Commitment 10: Develop and implement Quality Assurance Programs (QAPs) as required by DOE O 414.1C, "Quality Assurance." Deliverable A for Commitment 10: Approved Headquarters (HQ) program office QAPs, with approved paths forward and schedules for achieving full implementation, including revision and implementation of field element QAPs. Deliverable B for Commitment 10: Approved Field Element QAPs.

Section 5.1.4 states, in part, that: For each safety responsibility for which authorities can be delegated to the field offices, the following criteria need to be evaluated and deemed acceptable:

- Qualifications, experience, and expertise expected in the position receiving the delegation.
- Qualifications, experience, and expertise of the organization receiving the delegation.
- Proper framework of processes and procedures to implement the delegated authorities.
- Sufficient resources.
- Periodic re-verification of capability and capacity and demonstrated performance.
- Compensatory measures implemented, if needed.

DOE O 414.1C, *Quality Assurance,* requires that Headquarters organizations establish QAPs, which describe quality assurance roles and responsibilities, how these organizations ensure the quality of the delegation of authority process and criteria, and how the quality assurance criteria are met.

DOE P 450.4, *Safety Management System* Policy, Clear Roles and Responsibilities provides, as a guiding principle for integrated safety management, that "Clear and unambiguous lines of authority and responsibility for ensuring safety shall be established and maintained at all organizational levels within the Department and its contractors."

Lines of Inquiry

1. Have Commitments 9 and 10 identified in Section 5.1.4 of *DOE Implementation Plan to Improve Nuclear Operations, Revision* 2, been completed as reported?

2. Confirm that a process for delegation of authority and responsibilities has been established and assess the adequacy of this process. Determine if the process contains the following elements as specified in the DOE Implementation Plan:
   - review and verification of qualifications, experience, and expertise of the primary recipient of the delegation;
   - review and verification of qualifications, experience, and expertise of the staff of the primary recipient of the delegation;
   - review of the processes and procedures in place in the organization of the primary recipient of the delegation;
   - review and verification of adequate resources, both technically qualified staff and sufficient funding;
   - biannual (every 2 years) assessment of delegations and re-verification of all delegations, as necessary; and
   - definition of compensatory measures as needed.

3. Does the Department's FRAM assign responsibilities for implementation of site processes and procedures for delegation of authority?
4. Have requirements been established and implemented to review delegations every 2 years as stated in the Implementation Plan?
5. Has the delegation process been effectively implemented?

Ensuring Technical Capability and Capacity to Fulfill Safety Responsibilities (IP Section 5.1.5)

Introduction

As described in the *DOE Implementation Plan to Improve Nuclear Operations, Revision 2 (in response to DNFSB Recommendation 2004-1)*, one of the underlying issues needing resolution in strengthening Federal safety assurance is that DOE must establish and maintain the technical capability and capacity to fulfill its safety responsibilities at all levels of the Department. Following the DNFSB recommendation, a NNSA team found major reductions in nuclear safety expertise within NNSA resulting from organizational changes. In addition, the Department was facing further reductions in technical expertise from pending retirements; approximately one-half of the Department's workforce would become eligible to retire within the next 5 years following the review. The Resolution Approach to this issue provided a discussion of the Department's intent to identify two to three people who are the most experienced and technically capable in at least five selected functional areas and to charge these individuals with a central role in the qualification of others (Commitment 11). Commitment 11 also included actions to provide descriptions of their roles in improving overall capability, as well as a plan for implementing the concept and a plan mechanism for implementing the list. Next, the Resolution Approach discussed planned supplemental training activities for DOE safety professionals, senior managers, and decision-makers responsible for nuclear safety, including those responsible for nuclear safety oversight. Specifically, actions were provided to describe, implement, and assess a Nuclear Executive Leadership Training program and to provide plans for fully developing the Department's training and professional development program (Commitment 12). Finally, the Resolution Approach discussed ongoing and planned actions for the Department's Federal Technical Capability Panel (FTCP). Planned actions for the FTCP included development of corrective actions to improve recruiting, developing, training, qualifying, maintaining proficiency, and retraining of technical personnel (Commitment 13). Commitments 11, 12, and 13 were reported to the DNFSB as closed in July 2005, September 2006, and January 2007, respectively.

Criteria

Section 5.1.5 of the *DOE Implementation Plan to Improve Nuclear Operations, Revision 2 (in response to DNFSB Recommendation 2004-1)* specifies the following commitments and deliverables:

- DOE has implanted a program or process to identify, describe, and maintain a list of highly qualified and experienced personnel in key nuclear safety functional areas.
- DOE has implemented a plan for implementing the concept of using the highly qualified and experienced personnel to assist in improving overall technical capability within the Department.
- DOE has implemented the Nuclear Executive Leadership Training program.
- DOE has performed an assessment of the Nuclear Executive Leadership Training program's effectiveness.

- DOE has developed and is implementing a training and professional development program for Department safety professionals, senior managers, and decision-makers responsible for nuclear safety, including those responsible for nuclear safety oversight.
- The Federal Technical Capability Program (FTCP) has developed and the Department is implementing a Corrective Action Plan to improve recruiting, developing, training, qualifying, maintaining proficiency, and retraining of technical personnel.

Approach

Review IP commitment deliverables and associated program documents and effectiveness reviews.

Interview responsible DOE HQ personnel as necessary to determine status and effectiveness.

Inspection results will be provided in a summary report to be issued in 2010.

Lines of Inquiry

Has a list of highly qualified and experienced personnel in key nuclear safety functional areas been developed and issued? Is it being maintained current?

Has a program been developed to describe and implement the concept of using the list of key nuclear safety personnel to improve overall technical capability within the Department? Has the program been formally instituted in Department requirements?

Have adequate performance measures been developed and implemented to measure effectiveness of the program?

Has the Nuclear Executive Leadership Training program been implemented? Is a process in place to ensure that the training program continues to provide the required training to nuclear executives? Have all identified personnel completed the training? Has an assessment been performed and documented that evaluates the effectiveness of the training.

Has DOE developed and implemented a training and professional development program for Department safety professionals, senior managers, and decision-makers responsible for nuclear safety, including those responsible for nuclear safety oversight? Are identified elements of the program being effectively implemented?

Has the FTCP developed a Corrective Action Plan (CAP) to improve recruiting, developing, training, qualifying, maintaining proficiency, and retraining of technical personnel? Does the CAP include a prioritized list of key positions that should be filled to enhance safety? Do the corrective actions within the CAP effectively address the issue identified in the IP? Have the individual corrective actions been completed or are they on schedule to be completed? Does the plan address actions to prevent recurrence of the loss of nuclear safety expertise?