

SUPPLEMENTAL DIRECTIVE

NNSA SD 226.1-1B

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HEADQUARTERS BIENNIAL REVIEW OF NUCLEAR SAFETY PERFORMANCE



**NATIONAL NUCLEAR SECURITY ADMINISTRATION
Office of Safety, Infrastructure and Operations**

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HEADQUARTERS BIENNIAL REVIEW OF NUCLEAR SAFETY PERFORMANCE

1. **PURPOSE.** To establish the requirements, processes, and procedures for conducting biennial reviews (BRs) under the National Nuclear Security Administration (NNSA) Chief of Defense Nuclear Safety (CDNS).
2. **AUTHORITY.** Department of Energy (DOE) Order (O) 226.1B, *Implementation of Department of Energy Oversight Policy*, directs that all applicable DOE organizations establish and implement an effective oversight program that is consistent with DOE Policy 226.2, *Policy for Federal Oversight and Contractor Assurance Systems*, and DOE O 226.1B in its entirety. NNSA Supplemental Directive (SD) 450.2A, *Functions, Responsibilities, and Authorities (FRA) for Safety Management*, specifies that the CDNS is responsible for the conduct of biennial and other types of reviews of NNSA sites and activities, as required by DOE directives, or as needed based on specific issues, to ensure that nuclear safety requirements and guidance are implemented appropriately and effectively.
3. **CANCELLATION.** NA-1 SD 226.1-1A, *Headquarters Biennial Review of Nuclear Safety Performance*, issued 12-16-11.
4. **APPLICABILITY.**
 - a. **Federal.** This SD applies to all NNSA federal personnel involved in developing, managing, and implementing regulations and directives that affect nuclear safety.
 - b. **Contractors.** Does not apply to contractors.
 - c. **Equivalencies/Exemptions.**
 - (1) **Equivalency.** In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at 50 United States Code (U.S.C.) sections 2406 and 2511, and to ensure consistency throughout the joint Navy/ DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Directive for activities under the Director's cognizance, as deemed appropriate.
 - (2) **Exemption.** Activities regulated through a license by the Nuclear Regulatory Commission (NRC) or a state under an agreement with NRC, including activities certified by NRC under section 1701 of the *Atomic Energy Act*.
5. **SUMMARY OF CHANGES.** This revision adds a baseline scope that focuses on those elements required for ascertaining nuclear safety as outlined in 10 Code of Federal Regulations (CFR) 830, and emphasizes using a performance-based approach. Additionally, it is a general update that includes organizational changes and updated references.

6. **BACKGROUND.** The CDNS is responsible for providing assurance to senior management that NNSA's nuclear operations are being conducted safely. In order to do so, the CDNS must ensure that the requirements of 10 CFR 830 (known as the Nuclear Safety Rule), are being effectively implemented for NNSA nuclear activities. A critical element for ensuring that the requirements of the Nuclear Safety Rule are effectively implemented is conducting biennial reviews of nuclear safety performance at field offices and HQ.

This SD establishes a process for conducting biennial reviews of nuclear safety performance that specifically addresses HQ requirements in the NNSA FRA and in DOE O 226.1B. CDNS leads biennial reviews to fulfill its oversight responsibilities. The reviews represent a significant investment in resources, both in terms of the reviewers, many of whom are supplied by the field offices, and the impact on the offices being reviewed. Consequently, participation in biennial reviews and use of the results is a major element of a systematic oversight strategy for NNSA organizations.

The CDNS is responsible for maintaining operational awareness of nuclear safety performance of Headquarters (HQ), field offices, and contractors on behalf of the Cognizant Secretarial Officer for Safety (CSO), Central Technical Authority (CTA), and the Administrator. The CDNS maintains this awareness through biennial and other types of reviews. The reviews provide credible, objective, value-added information to line managers on the status of program and field office oversight and implementation of nuclear safety requirements. The reviews facilitate continuous improvement in

- a. maintenance of nuclear safety requirements of 10 CFR Part 830, *Nuclear Safety Management*, 10 CFR Part 835, *Occupational Radiation Protection*, and Department of Energy (DOE) directives.
- b. institutionalization of Integrated Safety Management Systems (ISMSs) that affect the implementation and maintenance of nuclear safety requirements.
- c. NNSA oversight responsibilities and processes contained in Supplemental Directive (SD) 226.1C, *NNSA Site Governance*.

7. **REQUIREMENTS.**

- a. Reviews of HQ and field office performance, planning, and conduct of nuclear operations are performed every 2 years whenever possible, and must not exceed 3 years.
- b. Nuclear safety delegations in the areas of safety basis, startup, and restart of nuclear facilities must be evaluated during the biennial review.

8. RESPONSIBILITIES.

a. Chief of Defense Nuclear Safety, NA-51.

- (1) Uses results of the biennial reviews to inform the CTA, CSO, and the Administrator about the NNSA enterprise oversight of nuclear safety.
- (2) Coordinates, directs, and approves the conduct of biennial reviews as described in this SD.
- (3) Considers input from the office undergoing review when approving the scope of the biennial review.
- (4) Issues a 2-year biennial review schedule coordinating input from HQ line managers and Field Office Managers.
- (5) Selects the Biennial Review Team Leader.
- (6) Funds travel expenses for the review.
- (7) Engages and collaborates with assessed offices to address management and correction of issues identified through the review process upon request of the assessed office.
- (8) Transmits issues belonging to other organizations or agencies (such as DOE) for their awareness and resolution.
- (9) Collaborates with field and program offices to continuously improve assessment methods (e.g., criteria and review approach documents) and makes the reviews more performance based.

b. Biennial Review Team Leader. See Appendix A, section 3.a.

c. Biennial Review Team Members. See Appendix A, section 3.c.

d. Office Being Reviewed.

- (1) Identifies activities that should be accepted as having met review expectations.
- (2) Assists the Team Leader in determining the review scope.
- (3) Identifies any special interest areas for review.
- (4) Assigns functional area counterparts to support the CDNS team members. Understands and supports counterpart commitments to the review. See Appendix A, section 3.e, for office counterpart responsibilities.
- (5) Provides support for logistics, and derivative classification review.

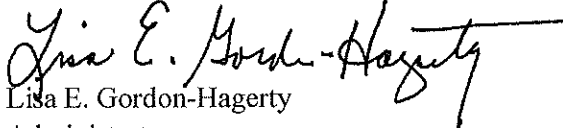
- (6) Provides CDNS an overview of the office oversight strategy and implementation of nuclear safety requirements.
- (7) Facilitates and completes factual accuracy review of the draft report early in the process.
- (8) Resolves management concerns, findings, and weaknesses identified in the final report of the biennial review. Shares corrective action plans with the CTA.
- (9) Shares with NA-51 significant changes in managing issues that are subsequent to initial corrective action plans.

9. REFERENCES.

- a. Title XXXII of P.L. 106-65, *National Nuclear Security Administration Act*, as amended, which established a separately organized agency within the Department of Energy.
- b. Title 10 of the Code of Federal Regulations (CFR), Part 830, *Nuclear Safety Management*.
- c. Title 10 of the Code of Federal Regulations (CFR), Part 835, *Occupational Radiation Protection*.
- d. DOE O 251.1D, Chg 1, *Departmental Directives Program*, issued 11-08-19.
- e. DOE O 252.1A, Chg 1, *Technical Standards Program*, issued 03-12-13.
- f. DOE O 410.1, *Central Technical Authority Responsibilities Regarding Nuclear Safety Requirements*, issued 08-28-07.
- g. DOE O 450.2, Chg 1, *Integrated Safety Management*, issued 01-17-17.
- h. DOE O 226.1B, *Implementation of Department of Energy Oversight Policy*, issued 04-25-11.
- i. DOE P 226.2, *Policy for Federal Oversight and Contractor Assurance Systems*, issued 08-09-16.
- j. DOE O 442.2, Chg 1, *Differing Professional Opinions for Technical Issues Involving Environment, Safety and Health Technical Concerns*, issued 10-05-16.
- k. DOE-HDBK-3012-2015, *Team Leader's Good Practices for Readiness Reviews*, issued 11-24-15.
- l. NNSA SD 450.2A, *Functions, Responsibilities, and Authorities (FRA) for Safety Management*, issued 06-04-18.

- m. NNSA SD 226.1C, *NNSA Site Governance*, issued 10-01-19.
 - n. NNSA SD 426.1, *Technical Qualification Program*, issued 02-13-19.
10. CONTACT. Questions concerning this SD should be addressed to the Chief of Defense Nuclear Safety at 505-845-4404.

BY ORDER OF THE ADMINISTRATOR:


Lisa E. Gordon-Hagerty
Administrator

Appendixes:

- A. Conducting the Review
- B. Documenting the Review
- C. Sample Assessment Form
- D. Assessment Form Processing Flow

APPENDIX A: CONDUCTING THE REVIEW

1. **PURPOSE.**

This appendix provides expectations when preparing for and conducting the review. It also specifies responsibilities for the Chief, Defense Nuclear Safety (CDNS) review team and for staff in the office undergoing review.

2. **BACKGROUND.**

The National Nuclear Security Administration's (NNSA) confidence in the safety of nuclear operations increases when nuclear safety requirements are fully implemented. The biennial review team evaluates federal oversight of compliance with the Nuclear Safety Rule (10 Code of Federal Regulations [CFR] 830) elements, which includes implementation of Documented Safety Analyses (DSAs), Technical Safety Requirements (TSRs), and relevant Safety Management Programs (SMPs) so that nuclear work can be performed safely. In addition, it includes review of the approved, verified Integrated Safety Management (ISM) System Description, as it affects nuclear work and operations.

DOE-HDBK-3012-2015, *Team Leader's Good Practices for Readiness Reviews*, and DOE-HDBK-3027-99, *Integrated Safety Management Systems (ISMS) Verification Team Leader's Handbook*, contain expanded discussions on the details of preparing for a review.

3. **RESPONSIBILITIES.**

The review team comprises a Team Leader, Senior Advisor, technical editor, and team members, including CDNS staff and subject matter experts (SMEs) from Headquarters (HQ) and field offices. All team members must have demonstrated technical competence in the areas assigned, and in performing Department of Energy (DOE) technical reviews. To support continuous improvement among NNSA staff, the desired goal is to have a 50/50 mix of HQ and field team members.

a. **Review Team Leader.**

- (1) Leads and manages the review team.
- (2) Selects team members, in consultation with CDNS.
- (3) Manages the initial planning and preparation efforts and the site pre-visit. Contacts the office senior line managers 10 to 12 weeks before the scheduled review.
- (4) Coordinates with the office on logistics, security, training, and support arrangements for the onsite portion of the review.
- (5) Tailors generic criteria, review, and approach documents (CRADs) for each review, when appropriate. Documents the basis for tailoring CRADs

in the final report and the review plan. Provides assessment form templates to the review team during the planning phase.

- (6) Ensures CRADs are current to reflect new requirements.
- (7) Develops the review scope and obtains concurrence from CDNS. Ensures team members stay within the scope of the review.
- (8) Develops the review plan and provides a copy to the site prior to the review.
- (9) Ensures that the office under review, team members, and CDNS (NA-51) staff have an opportunity to review and comment on the plan. Through this involvement, the office ensures that biennial reviews support its needs as described in DOE O 226.1B, *Implementation of Department of Energy Oversight Policy*, and NNSA SD 226.1C, *NNSA Site Governance*.
- (10) Resolves any feedback on the review scope or plan.
- (11) Leads the review, analysis, and development of conclusions.
- (12) Establishes priorities, resolves issues, and redirects the team, if necessary.
- (13) Communicates emerging issues with office senior management.
- (14) Ensures the quality and timeliness of the final report.
- (15) Informs the CDNS, Cognizant Secretarial Officer of Safety (CSO), program office, and the Central Technical Authority (CTA) of the progress of the review, as appropriate.
- (16) Conducts daily team meetings to keep members and office representatives aware of emerging issues.
- (17) Allows “closed” meetings, as needed, so team members can discuss sensitive issues or ideas that are not fully vetted.
- (18) Makes available a SharePoint (or NNSA-approved electronic) site with CRADs, site documents, records, draft reports, and assessment forms. For those without access, NA-51 will facilitate posting of documents.
- (19) Arranges through the field office interviews of the contractor, review of contractor records, and observations of nuclear operations, if needed.

b. Senior Advisor.

- (1) Has demonstrated technical competence in nuclear operations and assessments and is knowledgeable of the processes and the philosophy of the CDNS review.
- (2) Supports the Team Leader in the planning and conduct of the review. Advises the Team Leader.
- (3) Supports and mentors individual team members.

c. Team Members.

Experienced field office technical staff members are normally requested to participate to promote immediate feedback and to provide a vehicle for disseminating lessons learned from the review to all field sites. Individuals in training as team members for future reviews participate in reviews to gain experience, and typically work with an experienced reviewer.

- (1) Develop criteria for evaluating functional area performance or recommend updates to the generic CRADs when nuclear safety requirements change.
- (2) Identify where generic CRADs should be tailored to suit the specific office.
- (3) Review the appropriate directives, standards, statutes, regulations, industry standards, and best practices.
- (4) Read available site documentation, prepare interview questions, and prepare assessment forms for their assigned functional areas before the onsite review.
- (5) Verify that all necessary nuclear requirements are included in the site contract(s).
- (6) Evaluate the application of the ISM Core Functions and Guiding Principles in implementing nuclear safety requirements.
- (7) Work closely with their assigned office counterparts to effectively communicate potential issues and areas for improvement. Remain positive and straightforward.
- (8) In consultation with the Team Leader, determine the functional area criteria that meet the review objectives.
- (9) Keep the Team Leader informed of review activities and potential issues.

- (10) Provide working copies of assessment forms to the assigned counterpart for factual accuracy review.
- (11) Have demonstrated technical competence in the areas they are assigned to review. They should be qualified through the Technical Qualifications Program. Ideally, they should have experience in contractor oversight.
- (12) Mentor less experienced team members.
- (13) Participate in daily onsite team meetings, the pre-visit briefing, and occasional team meetings before the final onsite review.
- (14) Complete security, site, and facility-specific training requirements before arrival on site, when possible.

d. Technical Editor/Process Manager.

- (1) Monitors status of assessment forms and individual reviews. Notifies team members of form status.
- (2) Ensures classification reviews, appropriate team member reviews, and signatures are completed to support the review schedule.

e. Reviewed Office Counterpart Roles.

The office under review assigns a counterpart to support each functional area reviewer. The counterpart may be the functional area subject matter expert.

- (1) Guide the assigned biennial review team member, enabling team members to devote their time to evaluating instead of sorting documents or trying to find the person who can best answer questions.
- (2) Ensure that the team member has access to the appropriate documents, is able to observe the appropriate operations, and can interview the appropriate personnel who have the responsibility and expert knowledge to speak with authority on the functional area being evaluated.
- (3) Suggest documents and interviews to clarify any misperceptions. Inform management of any issues that are developing.
- (4) Remain available for the entire review period (especially onsite).
- (5) Understand duties in support of the review. (During the review, counterparts and the point of contact (POC) may have little time for performing routine responsibilities.)

- (6) Gather documents, arrange interviews or, if necessary, suggest operations that will allow the team member to arrive at a satisfactory conclusion for the issue or area under discussion.
- (7) Follow office process for factual accuracy to ensure a speedy review. The factual accuracy review must take less than 1 business day, whenever possible.

f. Reviewed Office Point of Contact Roles.

To simplify interactions and logistics, the field office also assigns a point of contact (POC) for the review. The POC helps to facilitate communication between the office's senior management and the Team Leader, ensuring management is aware of emerging issues and that the review team is able to get needed support while on site.

- (1) Confirm administrative support requirements, including classification reviews. Provide adequate personnel, facilities, and equipment to support the review team:
 - (a) private meeting and working spaces are critical for a successful review;
 - (b) adequate computer and communication resources (fax, telephone, printers, Video Tele-conferencing) must be available;
 - (c) site office personnel to perform classification reviews of the report and assessment forms;
 - (d) control and accountability of classified documents, if required;
 - (e) site- or facility-specific access and training requirements;. and
 - (f) unclassified documents and records are available in the NNSA electronic database (SharePoint) early in the review. (Whenever possible, documents supporting the review should be available within days of the pre-visit.)
- (2) Keep the chain of command informed of any issues that are developing; it is expected that communications will continue between counterparts and their supervisors.
- (3) Suggest documents or interviews that would correct any misconception, if an issue appears to be developing because of misinformation.
- (4) Follow office process for factual accuracy to ensure a speedy review. The factual accuracy review must take less than 1 business day, whenever possible.

- (5) Review the facts on the assessment forms for accuracy. The conclusions drawn are not subject to review, only the facts that are used to reach the conclusions. If the resolution with CDNS biennial review team is not satisfactory, the field office may follow the Differing Professional Opinion process.

4. PROCESS.

a. Schedule and Location.

The CDNS publishes the schedule of quarterly reviews over the next 2 years for each location:

- Sandia Field Office
- Nevada Field Office
- NNSA Production Office (Y-12 National Security Complex and Pantex Plant)
- Los Alamos Field Office
- Livermore Field Office
- Savannah River Field Office
- Office of Secure Transportation, Albuquerque, New Mexico
- NNSA Headquarters: Defense Programs (NA-10), Defense Nuclear Nonproliferation (NA-20), Emergency Operations (NA-40), Safety, Infrastructure and Operations (NA-50), Acquisition and Project Management (NA-APM)

b. Expectations of the Review Scope.

The biennial review process includes compliance and performance-based aspects of assessing the implementation and oversight of nuclear safety requirements at sites and offices. It requires substantial coordination, communication, and cooperation among the participants. It may cover a broad range of operations, or may focus on only a few. Where applicable, the review scope expectations include the following:

- (1) Requirements evolving from the Nuclear Safety Rule, including DOE and NNSA implementing directives included in site contracts.
- (2) Processes implemented to maintain the contract requirements are current.

- (3) Field office performance in implementing mechanisms provide comprehensive evaluation of nuclear safety-related submittals, such as project safety basis documents, DSAs, TSRs, ISM System Descriptions, readiness review documentation, and Quality Assurance Programs (QAPs), and required implementation plans and matrices.
- (4) Site performance of effectively assessing the contractor organization and the routine and unique nuclear activities, ensures performance is according to the core functions and guiding principles of ISM.
- (5) Evidence that implementing mechanisms provide the safety of nuclear operations.
- (6) Federal staffing includes adequate numbers of technically competent and qualified personnel to oversee the total breadth of nuclear safety requirements, including safety basis delegation responsibilities, where applicable.
- (7) Field assessments supplement documented performance evaluations of contractor nuclear safety requirements, when little or no field office oversight is evident.
- (8) Functional areas that meet biennial review expectations (based on previous assessments) may be reviewed using a graded approach or eliminated from the review.
- (9) Factual accuracy review ensures that all facts are established and that the issues are understood.
- (10) The office being reviewed may help identify the activities it believes should be accepted as having met review expectations. The review can then be tailored to the extent possible.
- (11) The final report documents the decisions to use a graded approach.

c. Functional Area CRADs.

The functional areas reflect the minimal essential Safety Management Programs (SMPs) that determine the office's nuclear safety performance.

- (1) Baseline Scope Review: The following functional area SMPs must be in the baseline scope review unless the functional area was graded as "Exceeds Expectations" during the previous review. These functional areas may be tailored depending on past performance.
 - Criticality Safety
 - Fire Protection

- ISMS – Functions, Responsibilities and Authorities (FRA)
 - Oversight
 - Quality Assurance (QA), software QA
 - Safety Basis (including Nuclear Safety Delegations)
 - Startup and Restart of Nuclear Facilities (Readiness)
- (2) Flex Scope Review: In addition, CDNS may conduct a flex scope review of functional areas based on CDNS observation or concerns about the office's performance since the last biennial review. These functional areas may be tailored depending on past performance. CDNS may propose a flex scope functional area review based on an enterprise emerging issue. Additionally, the Field Office Manager may request a specific functional area review.
- Conduct of Engineering
 - Conduct of Operations
 - Federal Technical Capability – Technical Qualification Program
 - Contractor Training and Qualification
 - Facility Representatives
 - Emergency Preparedness (led by NA-40)
 - ISMS (Contracts)
 - Maintenance
 - Nuclear Explosive Safety
 - Packaging and Transportation
 - Radiation Protection
 - Radioactive Waste Management
 - Special Interest Areas – Additional areas may be selected based on requests by HQ or the field office, recent independent oversight inspection findings, occurrence reports, or special interest items identified by the Administrator

- (3) Because HQ roles and responsibilities are different from those of field offices, CRADs for HQ reviews will be different from those used for field office reviews. However, the HQ office review scope includes some functional area criteria from the baseline scope and the Flex Scope Reviews. The review may evaluate additional functional areas, such as those listed above in the Flex Scope Review.
- Directives
 - Engineering and Project Management
 - Feedback and Improvement
 - ISMS Implementation
 - Line Oversight
 - Nuclear Explosives Safety
 - Quality Assurance
 - Safety Basis
 - Startup and Restart of Nuclear Facilities
 - Special Interest Areas – Additional areas may be selected based on requests by HQ or the field office, recent independent oversight inspection findings, occurrence reports, or special-interest items identified by the Administrator

d. Graded Approach/Tailoring CRADs.

- (1) The tailoring activity is a structured process that documents those activities and elements of nuclear safety that the review team has determined to be adequately assessed by office oversight. The manager is given the opportunity to identify activities that he or she considers to meet the expectations for the review. This allows the team to determine what activities can be credited with meeting the underlying goals of the review and tailor the CRADs accordingly to
- (a) reflect office-specific nuclear activities and their status.
 - (b) accommodate any unique requirements that may be invoked in the site contract.
 - (c) reflect the adequacy of the assessment processes to evaluate the status of implementation and maintenance of nuclear safety requirements.

- (d) reflect criteria based on requirements in DOE orders or the CFR.
 - (e) indicate which nuclear activities and nuclear facilities are to be assessed.
- (2) The review team uses criteria in generic CRADs to evaluate implementation of nuclear safety requirements. Generic CRADs provide as much uniformity among the reviews as practical given the difference in office missions. Generic CRADs also provide confidence that nuclear safety requirements implementation are evaluated similarly across nuclear activities. It is only through a consistent approach to the CRADs that CDNS can assert with confidence that the biennial review results in accurate operational awareness of nuclear safety requirements implementation across the complex.
 - (3) During the initial planning process, the review team evaluates the status of the federal and contractor assessment programs and completed assessments to establish those areas for which the evidence is persuasive that the performance of nuclear safety implementation is well known and that any required Corrective Action Plans (CAPs) are in place.
 - (4) Using this information, the generic CRADs are then individually tailored to the office being reviewed and are incorporated into the review plan. The basis for the modifications is documented in the final report.
 - (5) A key component of tailoring the CRADs is the input from the office senior manager or advisors as to areas that should be included in the scope of the review. Those areas may include those where they believe that the office assessment programs demonstrate satisfactory awareness.
 - (6) The review team shall also consider other recent, comprehensive, independent reviews such as readiness reviews, DSA implementation verifications, or similar assessments when tailoring the scope and depth of the review. At a minimum, corrective actions as a result of previous biennial reviews should be reviewed.
 - (7) In addition, the team coordinates with HQ and field office staff to incorporate their issues and areas of interest into the review plan.
- e. Scheduling the Review.

During this initial interaction between the Team Leader and the office senior line managers, the following logistics are discussed:

- (1) Dates of the pre-visit and review.
- (2) Scope of the review.

- (3) Administrative and technical support requirements.
- (4) Requested presentations and tours of facilities.
- (5) Documents needed for the review.

f. Planning and Conducting the Pre-visit.

The purpose for the pre-visit is to communicate the purpose and the process of the review to office personnel. It also allows the team to gain a sufficient understanding of the office and the status of implementation and maintenance of nuclear safety requirements to tailor the CRADs for the review.

- (1) An important aspect of the pre-visit is the opportunity for office management to present information on the effectiveness of their assessment processes.
- (2) It is essential that the entire team participate in the pre-visit and follow-on preparation activities.
- (3) The goals of the pre-visit should be met during the one-day visit or Video Tele-conferencing meeting.
- (4) By the conclusion of the pre-visit, the Team Leader and the review team should have
 - (a) gained an understanding of the organization and of the status of key nuclear safety program and oversight requirements implementation.
 - (b) familiarized themselves with the status of assessment processes so that they can adequately evaluate the implementation and maintenance of nuclear safety requirements.
 - (c) obtained key organizational documents.
 - (d) identified team member counterparts.
 - (e) developed a follow-up document request list.
 - (f) coordinated logistical arrangements for the onsite portion of the review.
 - (g) finalized the scope of the review.
 - (h) understand logistics, including computer and communication, security training, and support arrangements for the onsite portion of the review.

g. Identification and Selection of Review Team Members.

Once the Team Leader has made initial contact with the site and identified a Senior Advisor to support the review, the remainder of the review team is selected.

- (1) The team typically consists of HQ personnel and individuals from sites or offices other than the one being reviewed. The goal is to have a 50/50 mix of HQ and field personnel. While relying on a core team helps to maintain consistency, inviting a mix of NNSA backgrounds provides new perspectives.
- (2) All team members must have demonstrated technical competence in the areas they are assigned to review.
- (3) Fully qualified Facility Representatives of nuclear facilities, fully qualified Safety System Engineers, and Senior Technical Advisors who have completed Senior Technical Safety Manager (STSM) qualification, are particularly valuable as team members.
- (4) Team members must be committed and able to dedicate the required time and attention to the review.
- (5) At least one administrative support member of the team should be experienced in supporting reviews and preparing final reports, and should be available throughout the pre-review planning period, the onsite review period, and the post-review period when the final report is issued and HQ briefings are prepared and conducted.
- (6) The entire review team, including administrative support, should be available to participate in the pre-visit.

h. Performing the Review.

Observation, record reviews, and interviews compose the major review activities. Where possible, team members should observe federal employees conducting assessments of the contractor or interacting with contractor management on nuclear safety and ISMS issues. In those situations where evidence is not available to indicate that nuclear safety requirements implementation is being assessed effectively, observations at the nuclear work sites and in the nuclear facilities are required and will be identified in the CRADs.

CDNS recognizes that each office is unique and the applications of successful programs are often different among offices. The review team may share best practices from one office with other offices for use as desired by office management. Such information may be documented in the report as an Opportunity for Improvement.

A SharePoint (or NNSA-approved electronic) site containing documents and records to be reviewed will also provide a space for uploading and sharing of the assessment forms prepared by the team members. Appendix D is a graphic depiction of the process flow for completing assessment forms while on site.

(1) Gathering Data.

Data collection and documentation are critical activities in the review process. Evaluations rely primarily on three methods for collecting data: interviews, record reviews, and observations. Each method has its own limitations on completeness and reliability; therefore, it is important that the review team understand the value of cross-checking, whenever possible, the validity and integrity of data and information from interviews, record reviews, or observations with another independent information source.

In addition, as concerns or issues are identified, team members should make a concerted effort to identify the underlying causes that may extend beyond operations to the responsible management system.

The biennial review is guided by the CRADs; however, it is not intended that the CRADs limit the pursuit of potential issues, but those parts of the CRADs that were modified or eliminated during the tailoring process should not be evaluated unless approved by the Team Leader. Team member interest does not justify expanding an evaluation beyond the scope of the CRAD.

(2) Interviews.

(a) The interview is a valuable tool for obtaining data and information. Every interview should be carefully planned and structured to obtain the necessary information. Interviews are especially effective early in the review to provide insight on the structure and status of office programs and activities.

(b) Information gathered during interviews should be confirmed by obtaining additional supporting information through record reviews and observations.

(c) The assessment forms identify, by position or title, the interviewees.

(d) If, during the course of the review, a team member believes it necessary to interview contractor personnel, the Team Leader coordinates the request with field office management.

(3) Record Reviews.

Line managers usually rely on documentation (e.g., policies and procedures), and performance data to ensure that programs are properly implemented and administered. Record reviews provide the review team with information about the consistency of written policies and procedures, and may suggest weaknesses that need further exploration.

- (a) Needed records should be requested early enough in the review process to allow team members to use them in planning their review activities.
- (b) The use of electronic media transfer to the review team prior to the review is encouraged to maximize the efficiency of the record review process.
- (c) Records of greatest interest are usually the following:
 - 1 policy documents that describe how programs are designed to function;
 - 2 written program plans and procedural documents;
 - 3 records of self-assessments;
 - 4 other records that may indicate whether programs are implemented properly and functioning to achieve the desired result;
 - 5 communications between the office and the contractor regarding the office's effectiveness in conducting oversight; and
 - 6 contractor records, as needed, of nuclear safety requirements assessments, or records of nuclear safety requirements implementation, such as TSR surveillances or nuclear facility operator training and qualification records.

(4) Observations.

In the case of field reviews, observations should concentrate on witnessing the federal workforce while they conduct assessments of the contractor. For example:

- (a) The office's review process of the contractor's site and facility operations, to determine whether it is effective.
- (b) Facility Representatives in their day-to-day monitoring of the contractor.

- (c) Nuclear safety-related activities that occur between the office and the contractor, such as, nuclear operational planning meetings and senior management meetings.
- (d) If needed, contractor nuclear operations or nuclear facility assessments and activities.

(5) Lessons Learned.

An integral part of continuous improvement is the development and use of lessons learned. Team members must document activities and process details that enhanced or detracted from the review as the review progresses, and provide these to the Team Leader. Lessons learned related to the conduct of the review must be maintained by CDNS. Any lessons learned related to technical areas in the review must be included in the final report.

APPENDIX B: DOCUMENTING THE REVIEW

1. PURPOSE. While conducting the review, team members collect information to assess and document nuclear safety performance of the office. This appendix provides expectations for constructing and formatting the assessment forms and final report.
2. RESPONSIBILITIES.
 - a. Review Team Leader. Prepares the final report, ensures justifiable concluding statements, obtains concurrences and approval from Central Technical Authority (CTA), Cognizant Secretarial Officer for Safety (CSO), and Chief, Defense Nuclear Safety (CDNS), and transmits it to the Field Office Manager within 60 days of the onsite review.
 - b. Senior Advisor. Reviews assessment forms for technical merit and consistency. Determines whether the facts presented in the assessment forms support the conclusions.
 - c. Team Members. Complete the functional area assessment form, recommend grades, and obtain the Team Leader signature while onsite.
 - d. Editor/Process Manager. Edits, formats, and assembles the report and briefing materials.
3. PROCESS.
 - a. Analysis.

Analysis is essential to writing an effective and constructive final report. It is an ongoing process that involves a critical review of all results and leads to logical and supportable conclusions on the status of implementation and maintenance of office nuclear safety requirements. Analysis begins informally through daily team discussions about the observations, interviews, and record reviews. The objectives and criteria for each CRAD serve as analysis tools during the course of the review.

 - (1) Documenting the review of each functional area on an assessment form demonstrates that all of the elements of the CRAD were evaluated and that either the criteria were met or, if not met, what aspects of the criteria were found to be deficient. Appendix C contains a sample assessment form.
 - (a) Document what was reviewed, *not* what was not reviewed.
 - (b) The assessment form documents the review process, the review results, and the conclusions reached for each functional area. The assessment form also includes any issues, strengths, weaknesses, or opportunities for improvement.

- (c) The write-up for a criterion must clearly support the conclusion that the criterion was met or not met. If a criterion was not met, there must be a finding or weakness identified either by the review team or self-identified by the office or contractor.
 - (d) The discussion of each criterion ends with the statement, “The criterion (was or was not) met.”
- (2) It is important during analysis to give credit for self-identified issues if they are formally documented (e.g., assessment report, pre-visit presentations). The team member should follow up to determine whether corrective actions have been identified and are being implemented. Self-identified issues should be documented in the assessment form write-up, but not cited as a numbered issue (e.g., SNF.1-1/F).
- (3) On occasion, other departments or agencies (e.g., Office of Health, Safety, and Security (AU), Office of Enterprise Assessments (EA), and NNSA) have identified issues in the field office oversight. In these cases, the Biennial Review Team must evaluate implementation of any corrective actions identified for these issues. The team will not repeat the issue as a numbered issue in the functional area assessment form. However, the issue will be discussed in the assessment form and the reviewer must consider the status of correcting the issue when determining whether a criterion or objective is met for a functional area. The process values the ability of organizations to self-assess their performance and make timely and effective corrective actions, consistent with SD 226.1, *NNSA Site Governance*.

b. Notable conditions.

The assessment forms identify notable conditions, both positive and adverse:

- (1) Issue: A condition or situation that has led, or could lead, to degraded nuclear safety performance. Issues are evaluated in a risk-informed manner to clearly delineate those that pose the highest risk to nuclear safety. Each issue is categorized as either a *finding* or a *weakness*.
 - (a) Finding – a violation of an identified requirement.
 - (b) Weakness – a situation that, while not a direct violation of an identified requirement, may, if not resolved, lead to degradation in nuclear safety performance. Management attention is recommended to evaluate the situation and take action as deemed appropriate.
- (2) Opportunity for Improvement (OFI): A condition, practice, or situation for which a best practice or process improvement would result in improved efficiency or improved performance. Refrain from using OFIs

to document procedure updates/revisions or personal opinions. OFIs are best discussed in the assessment form. These discussions should include a basis for why the best practice would result in improvements.

- (3) **Management Concern:** A significant issue, or collection of similar issues, that indicates a systemic problem. Management concerns are highlighted in the Executive Summary of the final report. Repeat findings, or inadequately closed findings from a previous biennial review, may be identified as a management concern if additional management attention to their closure appears warranted.
- (4) **Noteworthy Practice:** A condition, practice, or situation that is highlighted for management attention for possible expanded implementation or communication to other offices.

c. Documenting Notable Conditions.

- (1) In the write-up that describes a finding, be as specific as possible as to what requirement is not being met.
- (2) An office requirement that is not being met is a compliance and performance issue; document it as such. If an applicable DOE or NNSA requirement is not being met (e.g., DOE Order requirement), this is a compliance issue that should be documented. Determine what compensatory measure or other action is being taken by the field office in lieu of meeting the requirement and evaluate and document it from a performance basis.
- (3) Findings, weaknesses, OFIs, and noteworthy practices should be brief, consisting of one to two sentences. These are copied verbatim from the assessment form write-up (under each criteria) and pasted into the assessment form after the Discussion of Results section.
- (4) Findings and weaknesses should be written up as deficiencies and not as recommendations to the office. For example, “The field office has not identified a responsible SME for fire protection systems,” instead of “The field office should identify a qualified SME for fire protection systems.”
- (5) Opportunities for improvement are recommendations and should be worded as such: “The BR team recommends....”
- (6) Doing what one is supposed to do, and doing it well, is not a noteworthy practice.

d. Conclusion Statement.

The conclusion of each assessment form begins with the statement “The objective (was or was not) met.” The conclusion must support why the functional area

meets the stated objective. The discussion then explains why this is a valid conclusion. This conclusion should be based on an evaluation of the assessment results with respect to the objective, not a numerical determination based on how many criteria are met or not met. Appendix C lays out a sample assessment form.

The reviewer and the Team Leader make the decision on the review conclusions. It is expected that from time to time there will be disagreement between the reviewers and the office being reviewed over specific findings and whether functional area objectives are considered to be met. While dialogue is encouraged with the personnel being reviewed, the primary purpose of the dialogue is to ensure that all facts are established and that the issues are understood.

e. Grades.

If an objective is met, the grade must be Meets Expectations or Exceeds Expectations. If the objective is not met, the grade must be either Needs Improvement or Does Not Meet Expectations. The grades assigned to each functional area follow these guidelines:

- (1) Exceeds Expectations: All criteria are met, the objective is met, and few or no issues are identified. Some noteworthy practices are identified.
- (2) Meets Expectations: Most criteria are met, and the objective is met. Some issues may be identified.
- (3) Needs Improvement: Objective is not met, but the office is able to address the issues without need for additional oversight, although external support or resources may be needed. Needs for external support or resources, if any, will be highlighted in the Executive Summary of the final report.
- (4) Does Not Meet Expectations: Objective is not met. Management concerns associated with the functional area reflect failure to meet nuclear safety performance expectations. External oversight is needed to resolve the identified issues; external resources may also be needed.

f. Writing the Final Report.

The purpose of the final report is to accurately and objectively represent the status of implementation and maintenance of nuclear safety requirements to the Office Manager and to HQ line management. The review team must review, integrate, and analyze results for both the individual and cumulative impact of each functional area on the overall status of implementation and maintenance of nuclear safety requirements. The final report covers the scope of the review (Section 4.b of Appendix A) and conveys the status of the following:

- (1) federal processes to ensure that the requirements of the Nuclear Safety Rule are effectively implemented and maintained for nuclear activities;

- (2) federal performance of nuclear safety responsibilities that verify the effectiveness of the contractor, as necessary, including the administration of delegated responsibilities and federal oversight responsibilities and processes contained in DOE O 226.1B, *Implementation of Department Of Energy Oversight Policy*;
- (3) federal implementation of Integrated Safety Management (ISM), with emphasis on integrated management of nuclear safety requirements and responsibilities, including the contractual treatment of nuclear safety requirements;
- (4) ISM System (ISMS) implementation, with emphasis on integrated management of nuclear safety requirements and responsibilities; and
- (5) office Functions, Responsibilities, and Authorities (FRA) documents in meeting the requirements of the DOE and NNSA FRAs, and verifying the flow down of nuclear safety-related FRA requirements into implementing processes and programs.

g. Report Outline.

The final report follows a standard format, which may be revised to meet the unique reporting needs of a specific evaluation.

Table of Contents
Executive Summary of key topical areas
1.0 Introduction
1.1 Objectives
1.2 Criteria, Review, and Approach
1.3 Team Composition and Functional Area Assignments
2.0 Overall approach
2.1 Review Process
2.2 Documentation
3.0 Assessment results
3.1 Management Concerns
3.2 Assessment results by functional area
4.0 Conclusions and recommendations
5.0 Lessons learned in technical areas reviewed, if any
Appendix A: Functional Area Assessment Forms

h. Minority Opinion.

When the reviewer and Team Leader cannot agree, such disagreement should be documented on the assessment form signed by both the reviewer and the Team Leader; but the final decision, which goes in the overall report conclusion, rests

with the Team Leader.

i. Differing Professional Opinion.

In situations where strong technical disagreement exists, the Differing Professional Opinion process is available for use, as documented in DOE O 442.2, *Differing Professional Opinions Manual for Technical Issues Involving Environment, Safety and Health Technical Concerns*.

j. Issuing the Final Report.

The Team Leader provides a summary of findings (with assigned grades) for each functional area to the office during the management briefing at the end of the review. The final report is sent to the Office Manager after the transmittal letter has been signed by the CTA.

k. Follow-On Actions.

The final report serves two functions: to provide operational awareness to management regarding the effectiveness of federal personnel in performing their assigned functions and responsibilities, and to provide the senior federal managers with a tool to promote continuous improvement. The Administrator expects federal managers to resolve the management concerns, issues (findings and weaknesses) and take action as appropriate, which may require follow-up actions and reports. Action required by the Administrator must be documented in the report forwarding memo.

l. Denoting Notable Conditions.

- (1) Use the abbreviation letters of the CRAD (e.g., T&Q.1).
- (2) Number issues consecutively as they are identified in the write-up, starting with 1. For example, if the issue is a finding, follow the T&Q.1 with a dash and the number 1 (e.g., T&Q.1-1/F, T&Q.1-2/F).
- (3) Follow the same format for weaknesses (/W), opportunities for improvement (/OFI), and noteworthy practices (/NP). Always start each new category with the numeral 1.
- (4) Cite findings, weaknesses, opportunities for improvement, and noteworthy practices in bold and in parentheses at the end of a sentence (e.g., "...while preserving responsibility for positions taken by subordinate organizations (**XXX.1-1/F**))."

m. Document Format.

Align the text of the assessment form under each criterion with a ¼-inch left indent. The conclusion and its discussion are flush left. The sample assessment

form in Appendix C further illustrates the format.

(1) Records Reviewed and References.

- Document number, title of document, revision number, date (mm/dd/yy format).

(2) Interviews.

- List the titles of the people, not their names. For example, LFO Deputy Manager.

n. Grammar Tips.

A technical editor's goal is to make sure that everyone who reads the final report understands what is being said. Below is a list of common obstacles to clarity.

- Most of the write-up should be in the past tense (e.g., "The procedure was implemented" not "The procedure is implemented").
- Avoid using the passive voice whenever possible.
- The words *ensure* and *assure* are often misused. Here is a helpful hint: You *assure* a person, you *insure* your car, and you *ensure* everything else. Usually *ensure* sounds better with *that* following it because, most of the time, *ensure* takes an object.
- In a list of three or more, put commas after all but the last in the series. Remember "eats, shoots, and leaves." If the list consists of a series of phrases, semicolons are used to separate each item in the series instead of commas.
- The words *criteria* and *data* are plural and take a plural construction.
- Try not to use a slash to divide two words; for example, feedback/improvement. Does that mean feedback or improvement, or feedback and improvement, or neither? Same goes for "and/or." It is rarely both. Please choose one.
- Unless an ampersand appears in the title of something as an ampersand and not the word "and," please use "and," except when it is used in acronyms such as ES&H and D&D.
- Use two spaces after a colon and after a period.
- Quotations that are longer than four lines are indented ¼ inch on each

side, but not set off in quotation marks.

- Punctuation marks always go inside quotation marks unless the punctuation applies to the sentence in which the quotation is contained.
 - Example: “I hate tech editors,” he thought to himself.
 - Compare with: Have you seen “The War of the Worlds”?
- Use of *a* versus *an*: When deciding whether to use *a* or *an* in front of a noun, use the initial sound, not the initial letter of the word. For example, “*a* cup,” “*an* apple,” but “*a* useful tool” (starts with a consonantal *y* sound), “*an* RCT” (starts with a vowelish *ar* sound), and “*an* hour” (starts with a silent *h*; only the vowel sound is heard).

APPENDIX C: SAMPLE ASSESSMENT FORM

FUNCTIONAL AREA: CONTRACTOR TRAINING AND QUALIFICATION (T&Q)	OBJECTIVE: T&Q.1 DATE: 10/15/2008	OBJECTIVE MET: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> GRADE: NEEDS IMPROVEMENT
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OBJECTIVE

T&Q.1: The site contractor has developed, and the field office has verified, the effective implementation and maintenance of a compliant Training and Qualification Safety Management Program (SMP) in support of nuclear activities at the site.

CONCLUSION

This section opens with the statement “The Objective was (or was not) met.” *Follow it with a concluding statement, which is also used in your functional area summary for the Final Report.*

The Objective was met.

The XFO Emergency Management Program (EMP) is a well-established and managed program. Upgrades to the program continue to be made to improve the XFO emergency management oversight function and XFO emergency response operations. The XFO personnel are well qualified to perform their oversight and response missions. SP-43 stated in its inspection report that “overall, XFO’s oversight has been important in communicating expectations and encouraging improvements in the XNL emergency preparedness program, which has continued to show improvement.”

The XNL EMP has been subjected to several reviews and evaluations in the past 2 years. The implementation of corrective actions and measures has contributed to significant improvements in the program status and increases the level of readiness and performance. Emergency response facilities are well equipped and adequately maintained to support XNL emergency operations. XNL EPO personnel are well trained and qualified to perform their emergency management and response missions. The improved communications and interactions between XNL and XFO have also created a positive environment for mutual aid and cooperation.

DISCUSSION OF RESULTS:

The review identified # Findings, # Weaknesses, and # Noteworthy Practices

Findings:

- **T&Q.1-1/F:** Copy the sentence or sentences from the text you have written.

- **T&Q.1-2/F:** Copy the sentence or sentences from the text you have written.

Weakness:

- **T&Q.1-1/W:** Copy the sentence or sentences from the text you have written.

Noteworthy Practice:

- **T&Q.1-1/NP:** Copy the sentence or sentences from the text you have written.

APPROACH

The five criteria below guided the assessment of this functional area objective. The review consisted of a combination of technical document reviews, personnel interviews, site tours, and field oversight observations.

CRITERIA

1. **The site contract specifies requirements for a T&Q SMP. Contractor implementing mechanisms provide a means for the T&Q SMP to meet the commitments in the DSA and TSRs for each nuclear facility.**

*Summarize your findings that support the conclusion as to whether the criterion was met. Note that, if a criterion has not been met, there should be at least one issue. Assign a number to the issue for your objective and bold its identifier (e.g., **T&Q.1-1/F**). Insert the identifier at the end of the paragraph in which you discuss the issue. Repeat for next issue, if any (e.g., **T&Q.1-2/F**). The write-up will end with the statement:*

The criterion was (or was not) met.

2. **The site contractor implementation processes for the T&Q SMP comply with contract requirements. A TIM has been submitted and approved by the field office that includes each nuclear facility and meets the commitments within the individual DSA and TSR. The elements of the training program comply with DOE expectations specified in DOE Order 5480.20A.**

The criterion was (or was not) met.

3. **The site contractor has conducted periodic systematic evaluations of the SMP and found it to be effective and compliant with contract requirements.**

The criterion was (or was not) met.

4. **Field office or other DOE/NNSA organizations have completed assessments of the contractor T&Q SMP in accordance with DOE-STD-1070-94. The assessments have found the SMP to meet DOE requirements and the commitments in the site nuclear facility DSAs and TSRs (DOE Order 5480.20A).**

The criterion was (or was not) met.

5. **Field office staff is organized, and assigned personnel have adequate technical competence, to oversee the performance of the contractor's T&Q SMP (FRA, DOE Order 5480.20A).**

The criterion was (or was not) met.

Reference(s):

- *DOE/NNSA Directives or other references applicable to the review*

Records Review(s):

- *List the office or site-specific documents you reviewed.*

Interview(s):

- *List each individual by TITLE, NOT NAME, whom you interviewed.*

Observation(s):

- *List any events, processes, or meetings that you witnessed, include date.*

APPENDIX D: ASSESSMENT FORM PROCESSING FLOW

