Department of Energy
Washington, DC 20585

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

Dear Mr. Chairman:

I am pleased to inform you that the Department of Energy (DOE) Office of Environment, Safety and Health (EH) completed two actions that are in response to Defense Nuclear Facilities Safety Board (DNFSB) Commitments.

The first action is the preparation and submittal of DOE-STD-XXXX-03, *Specific Administrative Controls,* (enclosed) into the DOE Technical Standards Program coordination process on December 30, 2003. This action is responsive to Commitment 4.2.2 in the Department's Implementation Plan for DNFSB Recommendation 2002-3. This proposed DOE Technical Standard will be subject to a 60-day DOE-wide review and comment period and will be finalized when the comments are resolved. When finalized, it will be referenced in DOE-STD-3009 and DOE-STD-3011 to complete Commitment 4.2.2 as noted in your December 8, 2003, letter to the Secretary. We will work with your staff to complete this action in a timely manner.

The second action is the issuance of the revised *DOE Safety Management Functions, Responsibilities and Authorities Manual* (FRAM), DOE M 411.1-1C (enclosed). Issuance of the FRAM completes Commitment 4.1.5 of the Department's Software Quality Assurance Implementation Plan. It also is responsive to Commitment 1.4 in the Department's *Quality Assurance Improvement Plan for Defense Nuclear Facilities* transmitted to you in the Secretary's letter of November 22, 2002. Your staff was instrumental in restructuring this new FRAM, particularly providing comments on the new format and content.

Please contact me at (202) 586-6151, if you have questions.

Sincerely,

Beverly A. Cook
Assistant Secretary
Environment, Safety and Health

Enclosures

cc:
M. Whitaker, DR-1

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SEPARATION

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DOE-STD-XXXX-YR
PROPOSED

DOE STANDARD

SPECIFIC ADMINISTRATIVE CONTROLS

U.S. Department of Energy
Washington, D.C. 20585

AREA SAFT

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1. INTRODUCTION

1.1 Scope

This Standard addresses guidance intended to apply to Administrative Controls that are selected to provide preventive and/or mitigative functions for specific potential accident scenarios, and which have safety importance equivalent to engineered controls that would be classified as Safety Class (SC) or Safety Significant (SS) if the engineered controls were available and selected. This class of Administrative Controls (ACs) is designated as Specific ACs. The Standard does not intend that Specific ACs be further classified as SC and SS ACs. There is no value in doing so, because there is no difference in the measures for assuring the dependability of Specific ACs that the Standard discusses that depend on whether protection of the public or workers or defense in depth is the function of the AC.

Similar to Safety SSCs, not all specific action ACs related to individual accident scenarios rise to the level of importance of Specific ACs, as discussed in the previous paragraph. Again, similar to SSCs of lower importance, which are sometimes referred to as "important to safety" or "defense in depth" SSCs, specific ACs of lesser importance can be addressed under the implementation of related Safety Management Programs.

The organization of this Standard is as follows: Section 1 relates this Standard to the DNFSB Recommendation to DOE concerning Specific ACs, and the existing requirements for derivation of safety bases, including hazard analyses, identification of hazard controls, derivation of TSRs, and the role of Administrative Controls in the TSR. It introduces the concept of Specific ACs.

Section 2 provides guidance for criteria by which to classify ACs as Specific ACs, how Specific ACs relate to the requirements and guidance for safety bases in 10 CFR 830 Subpart B, formats for TSR treatment of Specific ACs, and measures to ensure the dependability of Specific ACs.

Section 3 provides more guidance on the formats for treatment of Specific ACs in TSRs and provides some examples of those formats.

Sections 4 and 5 discuss training and causal and failure analyses as applied to Specific ACs.

1.2 Purpose

This Technical Standard clarifies and focuses existing requirements and guidance for the development and implementation of Administrative Controls (ACs) relied on to perform specific safety functions. To focus attention on the unique issues associated with of this type of AC, this Standard defines a new type of AC to be known as a Specific AC. A Specific AC exists when an AC:

a. is explicitly identified in the hazard analysis as a control needed to prevent or mitigate an accident scenario, and
b. has a safety function that would be safety significant or safety class if the function were provided by an SSC, or
c. is required to complete the safety function of a safety class or safety significant SSC.

This increased focus is intended to improve the dependability of these controls and to enhance their availability to perform specific safety functions when needed. This Standard should be used to comply with all DOE methods for DSAs and their associated TSRs for compliance with 10 CFR 830, when developing and implementing Specific ACs. It complements and expands on guidance contained in Nuclear Safety Technical Position 2003-1, *Use of Administrative Controls for Specific Safety Functions.*

1.3 Applicability

The information contained in this Standard is intended for use by all Department elements, including the National Nuclear Security Administration (NNSA), and all contractors for DOE-owned or DOE-leased, hazard category 1, 2, or 3, nuclear facilities or nuclear operations.

1.4 References

a. DOE-STD-3009-94,*CN2, Preparation Guide For U.S Department Of Energy Nonreactor Nuclear Facility Documented Safety Analyses*
b. DOE G 423.1-1, *Implementation Guide For Use In Developing Technical Safety Requirements*
c. DOE O 5480.19, *Conduct of Operations*, especially the Attachment to the Order, chapters X, Independent Verification, XI, Logkeeping, and XVI, Operations Procedures
d. DOE-STD-1092, Change Notice No. 1, *Writer's Guide for Technical Procedures*, December, 1998.

e. *Excellence in Human Performance,* INPO, September 1997
f. *"Environmental Management Guidelines and Lessons Learned for Nuclear Facility Safety Control Selection and Implementation,"* dated April, 2003.
g. *Guidelines for the Conduct of Operations at Nuclear Power Stations,* Institute of Nuclear Power Operations, INPO 01-002, May 2001
h. *Putting the Human into Hazard Assessment,* Helen Rycraft, BNFL, a paper presented at the 2003 annual meeting of the Energy Facility Contractors Group (EFCOG) Safety Analysis Working Group (SAWG), Salt Lake City, June 2003
i. Memorandum and its Attachment from the Assistant Secretary for Environmental Management, subject "*Environmental Management Guidelines and Lessons Learned for Nuclear Facility Safety Control Selection and Implementation.*" May 20, 2003

1.5 Background

1.5.1 U.S. DOE's Implementation Plan for DNFSB Recommendation 2002-3, *Requirements for the Design, Implementation, and Maintenance of Administrative Controls*

The DNFSB issued Recommendation 2002-3 on December 11, 2002, noting that the development, selection, and implementation of an effective set of hazard controls are among the most important elements of nuclear safety. DOE has established a priority process that favors preventive over mitigative measures, passive design features over active controls and engineered controls over ACs. The approved process recognizes that, where necessary or practical, ACs may play an important role in hazard prevention and mitigation.

The Board has agreed with DOE's overall guidance for a hierarchy of controls and agrees that ACs are sometimes appropriate to prevent or mitigate accident consequences—even those that exceed evaluation guidelines for risk to the public.

The Board recommended that DOE promulgate requirements to establish expectations for the design, implementation, and maintenance of ACs when relied on to provide specific safety functions, and to ensure existing ACs of this nature are evaluated and upgraded as necessary.

DOE accepted the Board's recommendation and prepared DOE's Implementation Plan for DNFSB Recommendation 2002-3, DOE-STD-XXXX-YR addresses the plan's requirement for consolidating and clarifying existing DOE rule guidance and standards to ensure that contractors consistently develop, implement, and maintain ACs consistent with their importance to safety.

1.5.2 Relationship of DOE-STD-XXXX-XX to 10 CFR 830, DOE G 423.1-1, DOE G 421.1-2 and DOE-STD-3009

The Nuclear Safety Management Safety Basis requirements of 10 CFR 830 require contractors responsible for category 1, 2, and 3 nuclear facilities to develop safety bases for those facilities that consist of Documented Safety Analyses (DSAs) and hazard controls in Technical Safety Requirements (TSRs) that are derived from the DSA hazard analyses. Various guides and technical standards, such as this document, provide guidance to help interpret and implement requirements. Three such documents relating to 10 CFR 830.205 are as follows:

a. DOE-STD-3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports*
b. DOE G 421.1-2, *Implementation Guide For Use in Developing Documented Safety Analyses To Meet Subpart B Of 10 CFR 830*
c. DOE G 423.1-1, *Implementation Guide For Use In Developing Technical Safety Requirements*

DOE-STD-3009 represents a "Safe Harbor," that is an acceptable method for preparation of a DSA under the requirements of 10 CFR 830, Appendix A, Subpart B. DOE-STD-3009 provides detailed guidance for preparation of SARs (DSAs), including the derivation of TSRs.

DOE-STD-3009-94 addresses derivation of ACs relative only to the anticipated application of ACs with major significance to defense in depth, or worker safety. These ACs are primarily related to safety management programs. Inclusion of these ACs in the TSRs formally acknowledges the importance of programmatic commitments (e.g., radiation protection, maintenance, quality assurance) to overall facility safety, but usually do not specify key aspects of each program as providing specific safety functions. The cumulative effect of these safety management programs is recognized as being important to overall facility safety, as opposed to specific accident risk reduction.

DOE Guide 423.1-1 provides detailed guidance for developing the TSR content, including ACs. The guide states that ACs should be a direct result of the DSA, but they may also result from institutional requirements that address many facilities. Section 4.10.7 of the guide goes further than DOE-STD-3009 in specifying the application of ACs, and recognizes that ACs may be applied for risk reduction of individual accident scenarios. Although recognized as being potentially applicable to specific accident scenarios, it states that ACs should be considered for defense in depth rather than as a primary control. The guide does, however, recognize the significance of "AC statements." When ACs specifically state a limit or specific requirement rather than a generic programmatic reliance, failure to meet such statements results in a TSR violation. Both DOE G 423.1-1 and DOE-STD-3009, otherwise state that safety basis violation can only result from a gross safety management program failure, significant enough to render the DSA assumptions invalid.

DOE G 423.1-1 and DOE-STD-3009 continue to provide relevant guidance on the application of ACs as part of the DSA required controls. However, this document is intended to further amplify the appropriate development and implementation of ACs as required in the DOE Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 2002-3.

1.5.3 Derivation of Hazard Controls in the DSA

Hazard controls in the DSA are selected to reduce the risks of authorized activities. Controls are classified by comparison to an Evaluation Guideline in the case of safety class SSCs for protection of the public, and by criteria described in DOE-STD-3009 for safety significant SSCs for worker protection and defense-in-depth. Safety class and safety significant SSCs are expected to be addressed in TSRs.

When selecting controls for inclusion as TSRs, it is preferable to choose engineering controls over ACs, due to the inherent uncertainty of human performance, and when choosing engineering controls, to choose passive SSCs over active SSCs. The actual design and selection process should consider the cost, availability, required reliability, and consequence of mechanical or human failure for each potential control.

1.5.4 The Role of ACs in TSRs

10 CFR 830 states that the safety basis means the DSA and hazard controls that provide reasonable assurance that a DOE nuclear facility can be operated safely in a manner that adequately protects workers, the public, and the environment.

Hazard controls means measures to eliminate, limit, or mitigate hazards to workers, the public, or the environment, including:

a. Physical, design, structural, and engineering features;
b. Safety SSCs;
c. Safety management programs;
d. Technical safety requirements (TSRs) ; and
e. Other controls necessary to provide adequate protection from hazards.

It is expected that the ACs will be tailored to the facility activities and the hazards identified in the DSA. This tailoring should be a direct result of the DSA, but it may also result from institutional requirements that address many facilities. As a general practice, safety controls for individual accident scenarios based on engineered SSCs are preferred to ACs because they are usually more reliable and more predictable. However, this should not be interpreted to mean that ACs do not have an important and useful role in the TSRs. Existing facilities sometimes use ACs as safety controls for individual accident scenarios because it is impractical to retrofit engineered SSCs.

There are instances where an AC may be the most important control. Such instances may include limiting the Material-at-Risk (MAR) for the facility. Accident analysis consequences could be unbounded if MAR is not established for the accident in question; therefore, MAR becomes the most important underlying assumption for all accident analyses as an AC.

Another instance where an AC may be one of the most important controls for a nuclear facility is in controlling transient combustible loading. Fire accident scenarios release large amounts of hazardous materials including radioactive and chemical materials. Therefore, controlling fire accidents in DOE facilities is of vital importance. Fire protection system design is based on the assumption that the combustible loading for a facility does not exceed a certain level, as an AC.

1.5.5 Application of ACs and Specific ACs

A distinction is made between general and Specific ACs. Most ACs are assumed to provide broad programmatic support for generic safety functions supporting defense in depth or worker safety. Failure to maintain all aspects of one of these programs will not result in a safety basis violation unless there is a gross failure, significant enough to render the DSA assumptions invalid. These ACs shall be classified as programmatic ACs.

Specific ACs are ACs that provide specific preventive or mitigative functions for accident scenarios identified in hazards analyses where the safety function has importance similar to, or the same as, the safety function of safety class or safety significant SSCs..

1.5.6 Specific ACs as an Alternative to Safety SSCs

In discussing safety SSCs, DOE-STD-3009 states, "that the decision as to whether an operating limit (such as an LCO) or a TSR administrative control is more appropriate for treatment of the SSC in a TSR is left to the judgment of the DSA preparer."

DSA preparers should avoid using Specific ACs as an alternative to a Safety SSC whenever possible. Efforts shall be made to use engineered SSCs whenever possible for controlling the likelihood and consequences of accidents. While Specific ACs may be acceptable for ensuring safe operation, their generally lower reliability, compared with engineered controls, must be evaluated carefully when choosing safety measures for long-term hazardous activities. Specific ACs shall be recognized for their elevated safety significance. Specific ACs which are credited in the analysis with providing specific safety function with safety importance equivalent to the importance of the safety function of safety SSCs must have stringent implementation and verification requirements to ensure their dependability and effectiveness.

2. Specific Administrative Control Attributes

The provisions in 10 CFR Part 830.204 require a DSA to include the derivation of hazard controls necessary to ensure adequate protection of the public, the workers, and the environment; demonstrate the adequacy of these controls; and define the process for maintaining the hazard controls current at all times and controlling their use.

All hazard controls are identified and characterized during the course of the hazards and accident analyses performed in support of the DSA. DOE encourages the use of design features and engineered safety features rather than procedural and ACs to address worker and public safety. Judgments must be made regarding what constitutes appropriate controls. These judgments should consider the level of the hazard and potential consequences, the practicality and effectiveness of possible control options, the importance of the mission of the facility, and other relevant factors, if any. These are all elements of the graded approach.

A subset of all hazard controls will get safety class or safety significant designation, depending upon the consequences of the accident that they are intended to prevent or mitigate. Controls that are identified as part of a safety management program (e.g., fire, criticality, radiation protection, etc.) may or may not end up as controls that need to have enhanced reliability as is the case with Specific ACs based on the designations derived from the hazards and accident analyses in the DSA. Hazard controls should be identified on a case-by-case basis and should be graded according to the guidance in DOE-STD-3009 and this Standard, with regard to the classification of hazard controls.

For site-wide safety management programs (e.g., radiation protection), the DSA should explain the features of those programs that are important to the facility safety basis and can refer to the site-wide program documentation for the details. As appropriate to the hazard, the DSA may identify specific controls (e.g., hazardous material inventory limits) that are required for safety. When such controls are not associated with the operation of a safety SSC, it may be appropriate to identify a "Specific AC" as discussed below.

2.1 Identification of Specific ACs

The specificity of ACs within the DSA/TSR will vary depending on the severity of hazards, the complexity of the facility, and the administrative control's overall contribution to controlling potential accident consequences (i.e., primary or supplemental control). Specific ACs may also be needed to protect important initial conditions assumed in the hazard analysis (e.g., the assumption on combustible inventory limits).

Depending on the situation, some ACs that perform specific preventive or mitigative functions for accident scenarios may be identified in hazards analyses. These are more specific actions than implied by general commitments to safety management programs and they may need to be raised to a higher importance level. Some of these ACs may have critical importance similar to, or the same as, those that would be classified as Safety Class (SC) or Safety Significant (SS) Structures, Systems, or Components (SSCs) if their safety functions or objectives were performed by engineered safety systems. These types of ACs are referred to as "Specific ACs."

If an administrative control:

a. is explicitly identified in the hazard analysis as a control needed to prevent or mitigate an accident scenario, and
b. has a safety function that would be safety significant or safety class if the function were provided by an SSC, or
c. is required to complete the safety function of a safety class or safety significant SSC,

then the AC must be designated as a Specific AC. Identification as a control or a limiting factor in a hazard analysis is a necessary criterion for a Specific AC. Other factors that may be useful to designate an AC as a Specific AC include:

a. The AC is the basis for validity of the hazard or accident analyses (e.g., a hazardous material inventory, such as combustible materials or material at risk (MAR) limit).
b. The safety function of the AC is explicitly identified in the DSA as needed to prevent or mitigate an accident scenario.
c. The AC has no defense-in-depth backup to prevent or mitigate an accident described in the DSA.
d. ACs provide the main mechanisms for hazard control (e.g., Safety SSCs are degraded, out of service, too costly to implement, or are impractical for a limited-life facility.)

e. Violation of the AC is important enough to result in an immediate TSR violation (i.e., the violation needs to be reported to DOE immediately).
f. The safety function of the AC could be considered for classification as safety significant or safety class if the function were provided by an SSC.
g. Safety SSCs are often used to provide a similar safety function.
h. The AC is used to replace a Safety SSC that has failed or been disabled.

No one of the eight factors in the second list need necessarily result in classifying an administrative control as a Specific AC, but they each are strong indicators that the AC should be considered for classification as a Specific AC.

2.2 Requirements Related to Specific ACs

DOE O 420.1A, Facility Safety, section 4.1.1.2, addresses the design requirements for nuclear safety. The Order states that..." nuclear facilities shall be designed with the objective of providing multiple layers of protection to prevent or mitigate the unintended release of radioactive materials to the environment. Defense in depth shall include: ...the provision of multiple means to ensure critical safety functions (those basic safety functions needed to control the processes, maintain them in a safe state, and to confine and mitigate radioactivity associated with the potential for accidents with significant public radiological impact..." These principles shall apply to the development and implementation of the ensemble of hazard controls, including Specific ACs. Redundant, independent, and diverse hazard controls, be they safety SSCs or Specific ACs performing functions similar to safety SSCs, are essential to ensuring that exposure to a high consequence hazard does not come about due to failure of a single barrier. Application of this concept to Specific ACs is particularly important, as ACs are generally regarded as less dependable due to the introduction of potential human error. The terms redundant, independent, and diverse, as applicable to Specific ACs, are discussed below:

Redundant: Important safety functions should not be protected by a single AC. The design process should strive to achieve an appropriate level of redundancy in the development of controls. In this context, redundancy refers to a second, similar control (as distinguished from diverse controls).

Independent: Controls should be independent of the process being controlled, and to the extent practicable from other controls which have been credited.

Diverse: To avoid the increased likelihood of failure due to common-cause effects, diverse controls should be employed to the extent practicable. In this context, diversity refers to separate controls of a dissimilar nature (as distinguished from redundant controls).

10 CFR 830, Subpart B, provides DOE's expectations for the safety basis requirements. DOE Guide 423.1-1 (TSR Implementation Guide) provides guidance on what technical safety requirements should contain and how they should be developed and maintained.

The DSA required by 10 CFR 830.204 furnishes the technical basis for TSRs. For some facilities, other documentation such as Criticality Safety Evaluations, Fire Hazards Analyses, or the Safety Evaluation Report may provide the bases for additional safety controls or operating restrictions that need to be reflected in the TSRs. DOE-STD-3009 provides guidance to be used in Chapter 4 of a DSA for identification of and documentation for Safety Class and Safety Significant SSCs. Where Specific ACs are used, similar identification and documentation shall be provided in the DSA. The DSA shall specifically describe the safety function, control description, functional requirements of the control, and the TSR controls for each Specific AC.

The DSA shall provide information (generally Chapter 5 of a DSA based on DOE STD-3009) to support the derivation of hazard controls described in the TSRs document. This includes the basis for Specific ACs or specific safety management programs necessary to perform institutional safety functions. Descriptions of Specific ACs in a DSA shall be sufficiently detailed so that a basic understanding is provided of what is controlled and why.

Specific ACs generally control a specific safety-related parameter or provide a specific safety function. These Specific ACs generally have two forms as identified below.

a. Limiting Conditions for Operation/ Surveillance Requirement

Specific ACs can often be written in the format of an LCO. Treatment of Specific ACs as LCOs in TSRs is contained Section 3 of this Standard.

b. Specific Directive Action AC

A Specific "Directive Action" AC is a statement of an AC requirement that prescribes a specific action to be performed in response to an observed facility condition. Treatment of Specific ACs as ACs in the TSRs is contained in Section 3 of this Standard.

2.2.1 Implementation and Maintenance of Specific ACs

The concepts of verification and validation are essential to ensuring that a Specific AC will effectively accomplish its required safety function maintain its ability to perform its required function.

Verification: TSRs must be initially (prior to implementation) and periodically verified to perform their intended safety function. In the context of Specific ACs, this may involve "dry runs," procedure walk-downs, tabletop exercises, or actual hazard/casualty exercises. Additionally, the verification process should be performed by knowledgeable individuals who were not part of the development of the control to assure an unbiased assessment of the effectiveness of the control. Also, the control should be designed such that it is easily and readily verifiable through appropriate and ongoing testing, examination or surveillance activities. Periodic re-verification that a Specific ACs can perform their intended safety function shall be addressed through LCO Surveillance Requirements for Specific ACs written as LCOs, or through facility operations and maintenance procedures if the Specific AC is incorporated into the AC section of the TSRs. Consequences of incorrect implementation of the control shall be evaluated and measures to prevent control failure should be factored into the control formulation.

Validation: The validation process ensures that plant operators have sufficient time, indicators or alarms, tools, or other necessary resources to perform the task. For Specific ACs, a human factors analysis may be necessary to ensure that the operators have sufficient indicators or alarms, time, and equipment to perform their required tasks. Formal engineering calculations may be necessary to ensure that plant operators have the appropriate time and resources to carry out the required tasks. (For example, if it is assumed that operators will take actions to detect and isolate a leak, flowrate calculations will need to be performed to substantiate the available time interval necessary to accomplish the task.)

2.2.2 Measures Used to Ensure the Dependability of Specific ACs

Dependability of Specific ACs relies on human (operator) performance. Human performance is affected by a variety of factors (normally called Performance Shaping Factors) which affect people and systems in different ways when combined. The main factors that affect the dependability of an operator are:

- Specification of the task
- Level of difficulty of the task
- Design of the equipment and feedback, e.g. alarms.
- Time available to do a task or recover an error.
- Stress levels induced by the external environment, e.g. noise, heat, light and protective clothing worn.

Each of these factors shall be considered on a case-by-case basis when formulating and implementing Specific ACs. Most, if not all, of these factors will be evaluated and addressed when validating a Specific AC's effectiveness.

The dependability of Specific ACs is improved by implementing the Guidelines for Conduct of Operations provided in DOE O 5480.19. All DOE operations are subject to the requirements and guidance given in the Order. The guidelines form a compendium of good practices and describe key elements of programs that support operations at DOE facilities. Their implementation should result in a high level of performance and therefore contribute to safe and dependable operation.

Operators often must rely on effective instrumentation and controls and support equipment to implement Specific ACs. For this reason, design of instrumentation and controls and support equipment that support a Specific AC, to the extent possible, should employ redundancy, diversity, and independence of critical components similar to the design of these features for Safety SSCs. This equipment shall meet performance requirements similar to that required to Safety SSCs.

The dependability of a Specific AC is improved when written as an LCO in the TSRs. Treatment of Specific ACS in TSRs is addressed in Section 3 of this Standard. Guidance for developing and writing LCOs is provided in DOE G 423.1-1. Although this guidance is directed at LCOs used to support SSCs, a Specific AC has a safety function with importance similar to, or the same as, the safety function of safety class or safety significant SSCs. As such, the guidance given in this section can be directly applicable to Specific ACs written as LCOs. Specific ACs written as LCOs should generally comply with the guidance given in DOE G 423.1-1 for LCOs including, but not limited to, Specification for Limiting Conditions for Operation, Action Statements, Operability, Surveillance Requirements, Violation of Technical Safety Requirements, and TSR Bases.

For a Specific "Directive Action" AC listed in the ACs section of the TSRs, dependability is primarily a function of periodic verification of the capability of the safety function provided by the Specific AC. The periodicity and method of this verification of the safety function must be addressed in the Specific AC. This verification may be accomplished through "dry-runs," procedure walk-downs, or actual hazard/casualty exercises.

Other specific measures that help to limit the likelihood of human error in performing the tasks required by a Specific AC, and that should be implemented as appropriate, include:

Independent Verification: Independent verification refers to the concept of having a second, qualified operator verify the actions of a primary operator Independent verifications should be conducted in a manner such that each check constitutes an actual identification of the component or action and a determination of both its required and actual positions or condition. To be independent, the integrity of the checks must be maintained by minimizing interaction between the personnel operating components and those performing the independent verifications. For example, it is not always possible to determine if an operator has completely shut or opened a valve by merely observing the action; mistakes in component identification or requirement determination might not be caught without both individuals' reading the labels and procedures. Additionally, consideration should be given to requiring managerial or supervisory signoff.

Task Feedback: To the extent practicable, measures should be implemented that provide appropriate feedback to the operators that a required action has been successful. This can be accomplished by the incorporation of appropriate monitoring equipment, valve position indication devices, etc.

Human Reliability Assessment: A formal Human Reliability Assessment (HRA) can serve to validate the dependability of a Specific AC. Alternatively, the HRA can identify weaknesses in the proposed procedures to implement a Specific AC and suggest additional measures to improve the overall dependability. However an HRA can be a significant effort that should only be resorted to when there is an obvouis bennefyt to justify that effort

2.3 Lessons Learned on Human Actions Used for Safety Controls in Accident Scenarios

Human actions, either taken in response to an event or taken proactively to establish desired conditions, are subject to errors of omission or commission. Sets of ACs are prone to common cause failure. The following attributes, which can be tailored as appropriate, can improve worker performance in utilizing ACs:

- Use of reader/worker/checker systems;
- Independent verification;
- Positive feedback systems;
- Interlocks;
- Warning signs and barriers;
- Alarms and monitors;
- Human factor analysis;
- Operator training and certification;
- Continuing training and re-qualification;
- Abnormal event response drills;
- Ergonomic considerations in procedures;
- Dry runs for non-routine operations; and
- Use of double staffing or direct supervision for hazardous operations.
- Human Reliability Assessment

2.4 Establishing a Safety Culture

Both the Institute of Nuclear Power Operations (INPO) Excellence in Human Performance Initiative 2001 (Ref. e) provides insights on the importance of developing an appropriate safety culture to improving human performance. Excellence in human performance is more likely when both workers and managers embrace the following principles:

a. People are fallible, and even well trained and experienced staff can make mistakes.
b. Error-likely situations are predictable, manageable, and avoidable.
c. Individual behavior is influenced by organizational processes and values.
d. People achieve high levels of performance based largely on the encouragement and reinforcement received from their leaders, peers, and subordinates.
e. Most accidents can be avoided by understanding the reasons mistakes occur and applying the lessons learned from past events.

Some of the INPO recommendations that are most relevant to dependable implementation of Specific ACs include:

a. Communicate expectations and work plans accurately and frequently. When work processes are changing daily, job briefings and use of repeat backs are encouraged.
b. Inform coworkers, supervisors, and managers when there is a potential problem with performing a task. Perform post-job critiques to identify process improvements.
c. Anticipate error-likely situations. Most hazardous activities require both the worker and the backup/supervisor to understand the work process.
d. Verify instructions, equipment, location, and time constraints.
e. Focus attention on the task at hand. Think through the steps and key decision points of a task before acting.
f. Expect success, but anticipate failure. Routinely ask "what if."
g. Take the time to do the job right.
h. Make sure schedules do not interfere with safety
i. Follow approved procedures with a sense of caution.
j. Stop the task and collaborate with others when unfamiliar or unanticipated conditions arise.

Leaders and managers should foster a work environment that encourages these behaviors on the part of the operations staff.

3. TREATMENT OF SPECIFIC ACs in TSRs

The TSR derivation section in the DSA is intended to provide a link between the safety analysis and the list of variables, safety SSCs, and ACs necessary to ensure safety.

3.1 TSR Treatment of Safety Controls Covered by Safety Management Programs

The traditional type of TSR ACs are the provisions relating to organization and management, procedures, record keeping, reviews, and audits governing safe operations and encompassed in safety management program commitments. Existing DOE directives *(References a. and b.)* specify that the ACs section of the TSR document will contain commitments to establish, maintain, and implement these programs at the facility and, as appropriate, facility organizational and administrative requirements. The brief mention of this type of control distinguishes them from Specific ACs.

Programmatic ACs are credited in safety basis documents with a significantly lower level of specificity than are Specific ACs. Absent in their selection are specific limits or discernible operator actions relating to specific hazard or accident analysis conditions. Rather, these ACs contain basic program elements or features that constitute the viability of the safety management program to support safe operations.

Typically, these ACs flow down as performance requirements contained in organizational or company-level procedures. Prior to implementation of DOE approved TSR ACs, contractors should first take appropriate actions to ensure a control's availability and readiness. These actions may include programmatic assessments, development, or modification of facility procedures, and training of facility personnel. Continuing verification of implementation of the programmatic control is typically verified through continuing assessment and performance monitoring (trend analysis).

3.2 Implementing Specific ACs in TSRs

When Specific ACs are identified, these shall be controlled through the TSR. Two methodologies are acceptable for the appropriate treatment of Specific ACs in TSRs. The first involves using the conventions for LCOs and associated SRs. Placement of the LCO and SR for a Specific AC shall be in the Operating Limits and Surveillance Requirements section of the TSR. This format shall be used when the Specific AC is well defined, clear corrective actions

are available, and conditions supporting the Specific AC can be easily surveilled. An example of this type of format is shown in Figure 1.

Guidance for developing and writing LCOs is provided in DOE G 423.1-1. Although this guidance is directed at LCOs used to support SSCs, a Specific AC has a safety function with importance similar to, or the same as, the safety function of safety class or safety significant SSCs. As such, the guidance given in this section can be directly applicable to Specific ACs written as LCOs. Specific ACs written as LCOs should generally comply with the guidance given in DOE G 423.1-1 for LCOs including, but not limited to, Specification for Limiting Conditions for Operation, Action Statements, Operability, Surveillance Requirements, Violation of Technical Safety Requirements, and TSR Bases.

The second method available to incorporate Specific ACs in a TSR document is to identify the specific requirement/action in the Administrative Control section of the TSR in a special section. This format may be appropriate when it is essential that the Specific AC be performed when called upon every time and without any delay (e.g., hoisting limits for nuclear explosives, MAR limits, or expected responses during criticality safety infractions not covered by an LCO) or when definitive program requirements for specific activities can be stated. An example of this type of format is shown in Figure 2 of this section.

3.3 Considerations In Developing a MAR TSR Control:

MAR is the major analytic assumption that must be made before a hazard analysis can support any consequence binning beyond the purely subjective and before any non-qualitative accident analysis can be initiated. Further, MAR assumption violations place the facility in a formally unanalyzed space for which consequences would be unknown and potentially unbounded. It is essential that MAR assumptions are protected in a highly reliable and enforceable manner. However, it is not normally possible to control MAR with an active or passive Structure, System, or Component (SSC). Under normal circumstances MAR cannot be controlled through a Design Feature (DF) or SSC based LCO. This leaves only administrative type controls in the form of a TSR Section 3 / 4 (Operating Limits and Surveillance Requirements) LCO (in itself a type of Administrative Control) for MAR or a TSR Section 5 AC (Programmatic AC or Specific AC).

Use of an LCO is warranted when a defensible estimate can be made of how much of a MAR exceedance can occur. Provided this estimate can be made, it may be possible to make an

estimate of the risk involved in exceeding the analyzed MAR for some time interval to support LCO action times as well as associated surveillance frequencies. The surveillance frequencies are established to ensure a reasonably confident expectation that MAR will not be exceeded. This must be documented in the supporting BASIS statements. When it can be defended, use of a MAR LCO has the advantage of allowing the facility an action completion time which, if met, would preclude a TSR violation. There are also feasibility limits associated with the LCO approach in addition to the need for estimating the potential size and duration of MAR exceedances. An example of this would be a facility, which needs to control MAR in a very large number of locations because of the way that the accident analysis was performed. If, for example, a facility analysis was performed on a glove box, room, wing, and facility wide basis and each of these yielded its own MAR limit. For consideration purposes assume that for a large facility, there may be 200 glove boxes, 100 rooms, 2 wings, etc. In this example, each location may require its own entry in the TSR LCO creating a very large number of entries (in this case potentially more than 300 entries). This could make the TSR LCO unduly complex and unwieldy from a human factors reliability perspective.

In the event that no reasonably confident estimate can be made of potential MAR exceedances to support action times and surveillance frequencies, or if the LCO is too complex and unwieldy, it may be hard to defend an LCO approach. In this case, it would be appropriate to use a TSR Section 5 AC (either programmatic or Specific AC). Because of the importance of controlling MAR to within the bounds of the analyzed consequence and hazard analyses, and the need for unequivocal MAR limits in a TSR, a Specific AC is preferred. However, Specific ACs do not support action times to allow the facility some time to correct the MAR exceedance. For the case involving the use of Specific ACs directive language should be used in the form of a SHALL statement which sets the maximum MAR limit. A violation of this Specific AC limit is an immediate TSR violation in this case. As in the case of an LCO, a Specific AC of this type also requires a specific MAR limit for each location. Use of a Specific AC may not be feasible for arguments similar to those used above for an overly complex and unwieldy LCO. In this case, use of a programmatic AC may be the only, though not preferred, path to controlling MAR.

When using a programmatic AC, there must still be clear delineation of what is controlled, why it is being controlled, and a clear linkage to the Hazard/Accident analyses. Detriments to the use of programmatic ACs for major assumptions like MAR are the control tends to become buried in

sub-tier documents which may be harder to control from an interpretability, mutability, and enforceability perspective. If major safety controls like MAR are placed in programmatic ACs, sub-tier procedures now become TSR-level enforceable documents thus expanding the size of the nuclear safety basis.

3.4 TSR Use and Application Modifications for Specific ACs

In both cases, the Use and Application section of the TSR should define the ground rules for treating Specific ACs, including treatment of non-compliances as TSR violations and associated reporting requirements. In addition, it has been found to be helpful to include a statement of the basis of the Specific AC where it is invoked.

3.5 Revising TSR Definitions to reflect Specific ACs

The treatment of Specific ACs which are distinguished from programmatic ACs requires the addition of related terms to Section 1 of TSRs. Specifically, the following definitions would be needed.

> Specific AC – An AC that provides a specific preventive or mitigative function for accident scenarios identified in a hazards analysis where the safety function has importance similar to, or the same as, the safety function of a safety SSC. (e.g., discrete operator actions, combustible loading program limits, hazardous material limits protecting hazard analyses or facility categorization.)

4. Training and Qualification Requirements for Specific ACs

4.1 10 CFR 830, Subpart A, Quality Assurance Requirements

The requirements for training of personnel in DOE Nuclear Facilities are clearly addressed through Section 830.121, Quality Assurance Program, and Section 830.122, Quality Assurance Criteria.

Section 830.121 requires that "(a) Contractors conducting activities, including providing items or services, that affect, or may affect, the nuclear safety of DOE nuclear facilities must conduct work in accordance with the Quality Assurance criteria in § 830.122."

Section 830.122 establishes the following criteria for Management/Personnel Training and Qualification:

a. Train and qualify personnel to be capable of performing their assigned work.
b. Provide continuing training to personnel to maintain their job proficiency.

4.2 DOE O 5480.20A

Detailed guidance on operator training programs is provided in DOE Order 5480.20A, "Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities." The Order is implemented using a graded approach at DOE Nuclear Facilities based on the facility hazard categorization. Contractors at these facilities are required to prepare a Training Implementation Matrix, which defines and describes the application of the selection, qualification, and training requirements of the Order. This Matrix includes any exceptions taken for requirements which are not implemented.

The following points should be reemphasized with respect to the selection and training requirements for ACs employed in safety-significant and safety-class applications:

Personnel Selection: The minimum qualification and experience requirements of the personnel performing the task must be carefully considered when developing important ACs. Many important ACs may require operators with special knowledge, skills, or physical abilities. In the combustible loading example previously noted, such a control will require an individual with specialized knowledge and experience in assessing the fire hazards in an area. Some controls

rely on the ability of the operator to distinguish color differences or to perform strenuous tasks or gain access to relatively inaccessible areas. These specific factors must be explicitly considered in the development and implementation of the controls.

Job Task Analysis: The development of Specific ACs should be preceded by a thorough job task analysis (JTA). A JTA will identify the required plant instrumentation, physical controls, operator skills and abilities, and other important variables necessary to successfully perform the task. The JTA must include or incorporate the appropriate human factors considerations in developing the controls.

Initial Qualification Requirements: Depending on the results of the JTA, the operator training and qualification requirements must then be developed. The training requirements must carefully account for and disposition each important variable in the JTA, hazard analysis, or other basis documents being used to develop the Specific AC. Many hazard and accident analyses contain assumptions (both implicit as well as explicit) regarding the ability of the operators to detect and respond to accident scenarios. It is important that these assumptions be clearly identified and that operators are specifically trained with respect to the Specific ACs that are credited in the analysis. The training program must explicitly identify the required training for Specific ACs. Additionally, consideration must be given to the development of formal written and practical examination requirements for these ACs.

Continuing training requirements: In addition to formal, initial training requirements, the knowledge and skills set for Specific ACs must be considered for inclusion in a continuing training program. This will ensure that the important training objectives for the controls are periodically reinforced to plant operators, supervisors, and managers. Additionally, such learning objectives must be considered in formal, periodic re-qualification programs.

5. SPECIFIC AC VIOLATION REPORTING AND FAILURE ANALYSIS

5.1 Notification Requirements for Violations of Specific ACs

Violations of Specific ACs must be reported to DOE in accordance with DOE Order 231.1A, *Environment, Safety, and Health Reporting*, and DOE Manual 232.1-2, *Occurrence Reporting and Processing of Operations Information*.

5.2 Causal and Failure Analysis for Violation of Specific ACs

Specific ACs provide assurance that the basic conditions assumed by the safety analysis are met. ACs are also assigned for the conditions, the safe boundaries, and the management controls necessary to ensure the safe operation of the facility and to reduce the potential risk to the public and facility workers from uncontrolled releases of hazardous materials or energy. Specific ACs are of vital importance for the overall safe operation of a nuclear facility. Violations of Specific ACs need to have causal or failure analysis performed and lessons learned developed from the violations in an effort to minimize future violations of the Specific ACs.

Identifying the causes for Specific AC violations is often difficult. The identification of human error as a root or contributing cause of violations provides little information about how to prevent similar problems from recurring. Recognizing human performance problems when they occur and accurately identifying their causes are necessary first steps to developing effective corrective actions. The following sections outline the DOE requirements for investigating and reporting Specific AC violations but the investigation of human performance failure is difficult. The investigator(s) must be both experts in human performance and the process or facility involved in the violation. See NUREG/CR-6751, *The Human Performance Evaluation Process: A Resource for Reviewing the Identification and Resolution of Human Performance Problems*.

5.3 Investigation of Specific AC Violations

DOE G 231.1-2, *Occurrence Reporting Causal Analysis Guide*, provides guidance on how to determine the Apparent Cause(s) of specific reportable occurrences including TSR violations and to explain the structure and nodes of the Causal Analysis Tree (CAT) for use in occurrence reporting and failure analysis.

The operator of a nuclear facility must: establish a process to investigate TSR violations including Specific AC violations that may occur during operation of the facility, determine their specific or generic cause(s) and generic implications, recommend corrective actions, and report those violations to the DOE as required by 10 CFR 830.205, DOE O 231.1A and DOE M 232.1-2. The following paragraphs outline DOE's expectations as they apply to Specific AC violations.

a. The investigator(s) should be independent from the line function(s) involved with the incident under investigation.
b. Investigations should begin within 48 hours of the TSR violation, or sooner, depending on the safety significance of the violation.
c. The violation failure log required for TSRs should be reviewed as part of the investigation.
d. The operator of a nuclear facility must monitor and document corrective actions, through completion; and
e. The operator of a nuclear facility must maintain documentation so that "lessons learned" may be applied to future operations of the facility.
f. The operator of a nuclear facility must have a formal policy or procedure in place for conducting TSR violations, and the policy or procedures needs to address the following elements:

    1. A documented procedure for investigating a TSR violation. This procedure is separate from any required Emergency Plan. The investigation of a TSR violation should begin as soon as possible, commensurate with the safety of the investigator(s), after the facility has been brought to a safe and stable state;
    2. A description of the functions, qualifications, and responsibilities of the investigator(s), the scope of the investigator(s) authority and responsibilities, and assurance of cooperation of management;
    3. Assurance of the investigator(s) authority to obtain all the information considered necessary, and independence from responsibility for or to the functional area involved in the violation under investigation;
    4. Procedures requiring maintenance of all documentation relating to TSR violations for 2 years or for the life of the operation, whichever is longer;

5. Guidance for personnel conducting the investigation on how to apply a reasonable, systematic, structured approach to determine the cause(s) of the problem consistent with the requirements of DOE O 231.1A and DOE M 232.1-2 and the guidance in DOE G 231-1. The level of investigation should be based on a graded approach relative to the severity of the violation and any resulting incident. Generally, any TSR violation is at least category SC2, although the Facility Manager may raise the designation (see Section 6 of DOE M 231.1-2). Violation of a Safety Limit is significance category SC1;
6. Requirements to make available, to the DOE, original investigation reports on request;
7. A system for monitoring to ensure completion of appropriate corrective actions;
8. Qualified internal or external investigators are trained to serve on investigating teams when required. The teams should include at least one process expert and at least one team member should be trained in root-cause analysis;
9. Auditable records and documentation related to TSR violations, investigations, and cause analyses are maintained. For each TSR violation, the incident report should include a description, contributing factors, causal analysis, and findings and recommendations. Relevant findings are reviewed with all affected personnel, and;
10. Two violations of the same Specific AC within a period of 12 months should be treated as a significance category SC1 and should be investigated by a trained team as if it were the violation of a Safety Limit. Note that this would then be the basis for a full investigation team rather than a single trained investigator as described in DOE G 231-1-2.

5.4 Specific AC Violation Reporting

The Final Report must be prepared and submitted as soon as practical but within 45 calendar days after initial categorization of the violation. The Final Report must be prepared using the writing instructions listed in Section 5.4.1 of DOE M 231.1-2 and must document the following:

a. The significance, nature, and extent of the violation;
b. The causes of the violation or condition (including the root cause, as required) using the codes provided in the CAT;

c. The immediate actions taken and the corrective action(s) to be taken; and

d. The lessons learned.

6. Figures

Figure 1 – Example LCO Format for Specific ACs

(TRU Waste Storage Facility)

3/4 OPERATING LIMITS AND SURVEILLANCE REQUIREMENTS

3.3 TRU Waste Storage Facility Material at Risk (MAR) Inventory Control

LCO: The quantity of nuclear material in containerized waste at TRU Waste Storage Facility **SHALL NOT** exceed the following MAR limits:

----------NOTE----------

All MAR inventory limits are provided in curies equivalent of Pu239 unless otherwise stated. ----------

1. The total quantity of nuclear material present at WASTE STORAGE FACILITY SHALL NOT exceed 2000 Curies.

AND

2. No single 55 gallon drum shall be ≥ 150 Curies

OR

3. No waste boxes or crates shall ≥ 300 Curies

MODE APPLICABILITY: At All Times [This should probably be "Modes," e.g., Static Storage, Movement of Material, etc.]

PROCESS AREA APPLICABILITY: Entire Facility

3.3 Limiting Condition for Operation: TRU Waste Storage Facility MAR Inventory Control ACTION(s)

CONDITION	REQUIRED ACTION COMPLETION	TIME
A. Total inventory of material within drums and waste boxes is exceeded	A.1 Suspend all waste container receipts at WASTE STORAGE FACILITY. **AND** A.2 Bring WASTE STORAGE FACILITY into compliance with quantity limits.	1 Hour 3 Weeks

B. Waste container Material at Risk limits are exceeded	B.1 Suspend all waste container movements within 10 feet of the non-compliant waste container. **AND** B.2.1 Remove the non-compliant waste container from WASTE STORAGE FACILITY **OR** B.2.2 Bring the non-compliant waste container into compliance with the material at risk limits.	1 Hour 3 Weeks 3 Weeks

SURVEILLANCE REQUIREMENTS	**FREQUENCY**
SR 3.3.1 Verify that quantities of waste in containers do not exceed the total limits for combined drums and waste boxes	Monthly
SR 3.3.2 Verify that the gram [Though this was supposed to be curies.] content of a containerized waste item that is to be received at Waste Storage Facility does not exceed the material at risk limits.	Before shipment OR At receipt

BASES:

BACKGROUND SUMMARY	Inventory Control and Material Management provides control for the location, storage configuration, and handling of nuclear material within WASTE STORAGE FACILITY based on the quantity, type, and form. This element protects the assumptions of the accident analysis that limit the amount of MAR available for potential release in the event of an accident.

APPLICATION TO SAFETY ANALYSIS	Accidents resulting from a breach of TRU waste containers can result in significant consequences to workers and potentially the public. Specific controls and restrictions are placed on radiological material inventory (containerized waste items and WASTE STORAGE FACILITY) to prevent the introduction of materials into WASTE STORAGE FACILITY that would invalidate the safety basis.
LCO 3.3	The total quantity of containerized waste that can be stored in WASTE STORAGE FACILITY is restricted to 2,000 plutonium-239 equivalent curies. Compliance shall be demonstrated by tracking the total quantity of nuclear material present within all waste boxes and other containers. The LCO set the initial MAR for accident scenarios that involve the entire WASTE STORAGE FACILITY waste inventory (*i.e.,* major fire, seismic). The initial MAR determination for these scenarios is based on projected waste container loading to the Site 95th UCL + 20% values. Using these values represents a very conservative MAR determination for the entire WASTE STORAGE FACILITY inventory. The MAR loadings for the highest estimated single TRU containers were used in the safety analysis for scenarios involving just a few waste containers and are carried forward as requirements. Compliance with these requirements can be demonstrated by utilizing the Waste and Environmental Management System (WEMS) database and process knowledge, scan data, radiological surveys, or other assessment methods indicating that the waste is TRU. Therefore, WEMS must contain a curie value or a waste type designation of TRU prior to acceptance of a container. High americium wastes do not fall in the category of TRU and are not evaluated in this safety analysis.
MODE APPLICABILITY	Waste storage is the only activity conducted in the WASTE STORAGE FACILITY.

ACTIONS A.1 and A.2	If WASTE STORAGE FACILITY exceeds the total quantity of material permitted, the building shall be brought into compliance to re-establish the assumptions of the WASTE STORAGE FACILITY specific safety analyses. Compliance may be re-established by removing container(s) from WASTE STORAGE FACILITY, re-assay to obtain a more accurate count, or expert review of an existing assay. Bringing WASTE STORAGE FACILITY into compliance within 3 weeks is required. Three weeks is considered adequate time for facility management to identify, communicate with, and coordinate a transfer to an appropriate on-site facility.
ACTIONS B.1 through B.2.2	If a waste container in WASTE STORAGE FACILITY contains more that the specified nuclear material at risk limits, all container movement in the vicinity of the non-compliant waste container must be suspended within 1 hour. Based upon the simplicity of the container movement activities in WASTE STORAGE FACILITY, one hour is judged to be adequate to notify all workers in the vicinity to suspend movement activities and to safely secure the handling equipment and waste containers involved. If a waste container in WASTE STORAGE FACILITY contains more than the specified nuclear material limits, the waste container is to be removed from the facility or brought into compliance to re-establish the assumptions of the WASTE STORAGE FACILITY specific safety analyses within 3 weeks. Compliance may be established by re-assay to obtain a more accurate count or expert review of an existing assay. Three weeks is considered adequate time for facility management to identify, communicate with, and coordinate a transfer to an appropriate on-site facility or to re-establish container compliance. An increase in a specific waste container MAR does not have any impact on contiguous waste containers, other than for issues dealing with criticality. Therefore, for all accidents not involving a criticality, high MAR containers do not require container segregation. The Criticality Safety Program is credited for handling any criticality issues related to high MAR containers and their movement. The likelihood of an occurrence of an accident involving identified high MAR waste container(s) is small during the maximum three-week interval for removal.

SR 3.3.1 and 3.3.2	Performance of SR 3.3.1 and 3.3.2 on a monthly basis assurances WASTE STORAGE FACILITY compliance with material at risk limits. Performance of SR 3.3.1 and 3.3.2 "before shipment" OR "at receipt" assures that WASTE STORAGE FACILITY is operated within the bounds of the safety analysis. A WEMS query may be used to perform SR 3.3.1, and SR 3.3.2.

Figure 2 – Example Directive Action Format for Specific ACs

Material-at-Risk Limit

Critical Safety Function

The material-at-risk (MAR) limit is the initial underlying assumption for the accident analysis performed in Chapter 3 of the DSA. The MAR limit protects this assumption and ensures that the consequences determined in the accident scenario are not invalidated placing the facility in formally unanalyzed space.

Control Description

The facility tritium limit SHALL be $\leq$ 50 grams.

Basis

The accident scenario in Chapter 3 of the DSA that produced the highest dose consequences (bounding scenario) to the public assumed a facility wide fire that consumed the entire facility inventory of 50 grams of tritium with 100% oxidation. Assuming a 100% oxidation of the tritium produces the highest dose conversion factor (DCF) for tritium uptake of 96 rem/Ci. Therefore, the MAR limit for the facility must be set to $\leq$ 50 grams of tritium to ensure that the bounding consequences are not exceeded as analyzed in the DSA.

7. CONCLUDING MATERIAL

Review Activity:
EM
NNSA
EH
NE
SC

Preparing Activity:
DOE-EH

Project Number:
SAFT-0091

Field and Operations Offices
CBFO
CH
ID
OH
OR
ORP
RFFO
RL
SR

Area and Site Offices
Argonne Area Office
Brookhaven Area Office
Livermore Site Office
Los Alamos Site Office
Nevada Site Office
Pantex Site Office
Savannah River Site Office
Sandia Site Office
Y-12 Site Office

SEPARATION

PAGE

DRAFT
DOE M 411.1-1C

Approved: XX-XX-03
Expires: XX-XX-07

SAFETY MANAGEMENT FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENVIRONMENT, SAFETY AND HEALTH

DISTRIBUTION:
All Departmental Elements

INITIATED BY:
Office of Environment, Safety and Health

SAFETY MANAGEMENT FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL

1. PURPOSE. This Department of Energy (DOE) Manual defines safety management functions, responsibilities, and authorities for DOE senior management with responsibilities for line, support, oversight, and enforcement actions. It provides detailed requirements to supplement DOE P 411.1, *Safety Management Functions, Responsibilities, and Authorities Policy,* dated 1-28-97.

2. CANCELLATIONS. DOE M 411.1-1B, *Safety Management Functions, Responsibilities, and Authorities Manual,* dated 5-22-01.

3. APPLICABILITY.

   a. DOE Elements. Except for the exclusions in paragraph 3c, this Manual applies to all DOE elements, including National Nuclear Security Administration elements, performing safety management functions (see Attachment 1).

   b. Site/Facility Management Contractors. This Manual does not apply to contractors.

   c. Exclusions. The facilities and activities of the Naval Nuclear Propulsion Program and the Power Marketing Administrations are exempt from the requirements of this Manual. In addition, to the extent the requirements in this Manual conflict with or duplicate the requirements of the Nuclear Regulatory Commission, the Office of Civilian Radioactive Waste Management is exempt from the requirements of this Manual.

4. SUMMARY. This Manual is composed of eight chapters that document the DOE senior management functions, responsibilities, and authorities related to safety management. The eight tables that follow the chapters provide detailed lists of the safety management functions, responsibilities, and associated authorities of the Secretary, Deputy Secretary, Under Secretaries, and various Secretarial Officers. Appendix A is a list of acronyms used in the Manual.

5. CONTACT. Questions concerning this Manual should be addressed to Mary F. Haughey, Office of Environment, Safety and Health, 301-903-2867 or Mary.Haughey@eh.doe.gov.

BY ORDER OF THE SECRETARY OF ENERGY:

KYLE E. McSLARROW
Deputy Secretary

CONTENTS

CONTENTS (continued)

1. INTRODUCTION AND OBJECTIVE

The Secretary of Energy (the Secretary) has the primary responsibility for ensuring that work at Department of Energy (DOE or the Department) facilities and sites is performed in a manner that adequately protects the worker, the public, and the environment. This responsibility flows from the Secretary through line management to the individuals performing the work. The goal of performing work safely is reflected in the guiding principles and core management functions established in DOE P 450.4, *Safety Management System Policy,* dated 10-15-96, and is codified in the Department of Energy Acquisition Regulations, found at Title 48 of the Code of Federal Regulations (CFR), §§ 970.5204-2, and 970.5223-1 (48 CFR 970.5204-2 and 970.5223-1). These guiding principles include the following:

a. line management[1] is responsible for protection of employees, the public, and the environment and

b. DOE and its contractors must clearly define and maintain the lines of responsibility for ensuring protection of environment, safety, and health (ES&H) at all organizational levels.

This Manual addresses both of these guiding principles for DOE by documenting DOE senior management functions, responsibilities, and authorities relating to safety management. The term "safety management" for purposes of this Manual refers to those DOE functions and responsibilities that pertain to and govern the safety[2] of operations and activities at DOE sites and facilities.

This document is required by DOE P 411.1, *Safety Management Functions, Responsibilities, and Authorities Policy,* dated 1-28-97, which mandates the development of a corporate-level document to establish the clear lines of responsibilities and authorities that are necessary to—

- develop and implement requirements and standards that are necessary to provide reasonable assurance that workers, the public, and the environment are adequately protected;
- define essential safety management functions and establish unambiguous DOE roles, responsibilities, and authorities for executing them to accomplish the authorized work;
- clarify the roles, responsibilities, lines of authority, and delegations between Headquarters (HQ) and field organizations;

[1]DOE line management refers to the Department organization that is responsible for safe operations of a facility or site and has a linear reporting relationship extending from the Secretary to the people in the facilities directly performing the Department's missions.

[2]For the purposes of this Manual, the term "safety" encompasses "environment, safety, and health" functions to the extent that those functions relate to the safe management of DOE facilities or activities. This Manual does not address security and emergency management, nor does it address protection of human subjects and worker compensation.

- ensure compliance with legal requirements and manage against contractual requirements;
- define functional relationships and responsibilities among DOE line, support, oversight, and enforcement organizations; and
- address the coordination of line direction from multiple program offices at a single site.

This Manual is the corporate-level document that defines safety management functions, responsibilities, and authorities for DOE senior management with responsibilities for line, support, oversight, and enforcement functions. The framework for the lower-tier functions, responsibilities, and authorities documents is discussed in Chapter 8.

2. SCOPE

The functions, responsibilities, and authorities documented in this Manual apply to the DOE senior managers and organizations responsible for the overall direction, program support, and oversight of work throughout the DOE complex, for both nuclear and non-nuclear facilities.

This Manual applies to Departmental elements performing safety management functions, including the National Nuclear Security Administration (NNSA).

It does not apply to the following:

- Naval Nuclear Propulsion Program,
- Power Marketing Administrations, or
- Office of Civilian Radioactive Waste Management to the extent it overlaps or duplicates requirements of the Nuclear Regulatory Commission.[3]

This Manual applies to the Secretary, the Deputy Secretary, the Under Secretaries, the Cognizant Secretarial Officers (CSOs) (see Chapter 5), and the support functions of the Office of Environment, Safety and Health and the Office of Independent Oversight and Performance Assurance (see Chapter 6). The Office of Environment, Safety and Health is a program office with responsibilities for facilities and programs. Consequently, the Assistant Secretary for Environment, Safety and Health must meet the CSO requirements listed in this Manual (see Chapter 5) and the support responsibilities that are specifically listed for the Office of Environment, Safety and Health (see Chapter 6).
In addition, the Federal employee occupational safety and health (FEOSH) requirements apply to all DOE organizations, both at HQ and the field, with the exceptions listed in the third paragraph of this chapter. FEOSH requirements are documented in DOE O 440.1A, *Worker Protection*

[3]See DOE HQ 250.1, *Civilian Radioactive Waste Management Facilities—Exemption from Departmental Directives,* dated 5-1-98.

Management for DOE Federal and Contractor Employees, dated 3-27-98, and DOE HQ[4] O 442.1, *Headquarters Occupational Safety and Health Program,* dated 11-3-01. The Assistant Secretary for Environment, Safety and Health is the Designated Agency Safety and Health Officer (DASHO) responsible for defining requirements and guidance for the DOE FEOSH program. The Office of Management, Budget and Evaluation is responsible for implementing FEOSH requirements at DOE HQ facilities. Field element managers (FEMs) are responsible for implementing FEOSH requirements at their field facilities.

The Office of Management, Budget and Evaluation is also responsible for developing and implementing aviation safety policy and providing recommendations to the Secretary on aviation safety matters.[5]

This Manual only addresses the functions, responsibilities, and authorities for DOE organizations. It does not impose requirements on contractors.

3. CHANGE CONTROL

This document is a Manual in the DOE Directives System. The responsibilities listed in this Manual are derived from Congressional legislation (such as the Atomic Energy Act of 1954 (AEA) and the DOE Organization Act), Executive orders (E.O.s), Federal regulations, DOE directives (including Secretarial policies and commitments), and Secretarial memoranda.

This document is expected to change as the Department alters its organizational responsibilities and will be updated annually or as required. Changes to this Manual must be made through the DOE Directives System in accordance with DOE O 251.1A, *Directives System,* dated 1-30-98, and DOE M 251.1-1A, *Directives System Manual,* dated 1-30-98. However, the Secretary may override or change responsibilities in this Manual through Secretarial memoranda. Secretarial Memoranda that override or change responsibilities in the FRAM will be posted on the FRAM web page at http://tis.eh.doe.gov/nsps/frams.html. Any changes made by Secretarial memoranda to the responsibilities documented in this Manual must be documented in the next update of the Manual.

In the event that responsibilities documented in this Manual conflict with responsibilities defined in Congressional legislation, E.O.s, Federal regulations, or DOE Orders, Notices, or Manuals, the provisions of those documents override this document. If such conflicts are discovered, please notify the Office of Environment, Safety and Health of the need to update this Manual.

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[4]DOE directives with the designation of HQ are only applicable to headquarters organizations.

[5]See Secretarial Memorandum to Headquarters and Field Elements, dated April 15, 1999.

4. OFFICE OF THE SECRETARY

4.1 Secretary of Energy

Through the authorities granted under the AEA, as amended; the Energy Reorganization Act of 1974 (P.L. 93-438); and the Department of Energy Organization Act (P.L. 95-91), the Secretary is responsible for the overall direction and administration of the Department. This responsibility includes ensuring that the missions of DOE are performed in a manner that protects public health and safety and advances the goals of restoring, protecting, and enhancing environmental quality.[6] The Secretary is authorized by these Acts to prescribe such procedural and administrative rules and regulations as the Secretary deems necessary or appropriate to administer and manage the functions of the Department.[7] Except as otherwise prohibited by law, the Secretary may delegate the functions of the Secretary to officers and employees of the Department and may authorize successive redelegations.[8]

Table 1 lists specific responsibilities for the Secretary as defined in Congressional legislation, Federal regulations, Presidential directives, as well as DOE safety directives. Although DOE directives are not strictly authorizing documents for the Secretary, if a directive explicitly lists a responsibility for the Secretary, that directive and the responsibility have been included on the Table for completeness.

4.2 Deputy Secretary

The Deputy Secretary reports to the Secretary and is authorized to act for and exercise the functions of the Secretary during the absence or disability of the Secretary or in the event the position of the Secretary becomes vacant.[9] The Deputy Secretary also serves as the Chief Operating Officer and is responsible for the day-to-day management of the Department against its mission objectives. The Deputy Secretary is responsible for direct line management of the Under Secretaries, the Energy Information Administration, the Chief Information Officer, the Office of Independent Oversight and Performance Assurance, the Power Marketing Administrations, and all Secretarial support and staff offices with the following exceptions:[10]

- Office of the Secretary,
- Office of the Assistant Secretary for Congressional and Intergovernmental Affairs,
- Office of Security,
- Office of Intelligence,

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[6]See DOE Organization Act, Sec. 102, item (13).

[7]See DOE Organization Act Sec. 644.

[8]See DOE Organization Act, Sec. 642.

[9]See DOE Organization Act, Sec. 202.

[10]See Memorandum from Secretary Spencer Abraham to the Heads of Departmental Elements, July 26, 2001.

- Office of Counterintelligence, and
- Office of Public Affairs.

Table 2 lists specific responsibilities for the Deputy Secretary as defined in DOE safety and environment directives.

4.3 Under Secretaries

The Under Secretaries in the Department of Energy are the managers responsible for directing the activities of the Department's line and certain safety support organizations. There are two Under Secretaries in the Department:

- Under Secretary for Energy, Science and Environment and
- Under Secretary for Nuclear Security/Administrator for NNSA.

The Under Secretary for Energy, Science and Environment has direct line management responsibility for the following offices:[11]

- Civilian Radioactive Waste Management;
- Energy Efficiency and Renewable Energy;
- Environment, Safety and Health;
- Environmental Management;
- Fossil Energy;
- Nuclear Energy, Science and Technology;
- Science; and
- Legacy Management.

Table 3 lists specific responsibilities for the Under Secretary for Energy, Science and Environment as defined in and delegation orders.

NNSA was established by the NNSA Act in the National Defense Authorization Act for 2000 (see P.L. 106-377, October 27, 2000). The NNSA Act also defines specific responsibilities for the Under Secretary for Nuclear Security/Administrator for NNSA. The Under Secretary for Nuclear Security/Administrator for NNSA is subject to the authority, direction, and control of the Secretary. That authority, direction, and control may be delegated only to the Deputy Secretary, without redelegation.[12] The Secretary may direct officials of the Department who are not in

[11] See Memorandum from Secretary Spencer Abraham to the heads of departmental elements, July 26, 2001.

[12] See NNSA Act in the National Defense Authorization Act for 2000 (See P.L. 106-377, October 27, 2000) (NNSA

NNSA to review NNSA programs and activities and make recommendations to the Secretary regarding administration of those programs and activities, including consistency with other similar programs and activities.

In carrying out NNSA missions, the Under Secretary for Nuclear Security/Administrator for NNSA must ensure that all NNSA operations and activities are consistent with the principles of protecting the environment and safeguarding the safety and health of the public and the NNSA workforce.[13]

The Under Secretary for Nuclear Security/Administrator for NNSA has direct responsibility for the following offices:

- Defense Programs,
- Defense Nuclear Nonproliferation,
- Naval Reactors,
- Emergency Operations,
- Infrastructure and Security, and
- Management and Administration.

Table 4 lists specific responsibilities for the Under Secretary for Nuclear Security/Administrator for NNSA as defined in Congressional legislation and DOE safety directives and delegation orders.

As discussed in further detail in Chapter 8, each Under Secretary must develop a functions, responsibilities, and authorities document that identifies the functions, responsibilities, and authorities specific to that position. The Under Secretaries functions, responsibilities, and authorities documents must also define how the authorities of each Under Secretary are delegated and what responsibilities are assigned to specific Secretarial Offices within that organization. In particular, the Under Secretaries may provide additional direction to their CSOs and FEMs that should be reflected in CSO and FEM functions, responsibilities, and authorities documents.

5. COGNIZANT SECRETARIAL OFFICERS

As stated in DOE P 411.1, *Safety Management Functions, Responsibilities, and Authorities Policy,* dated 1-28-97, line management is responsible and accountable for ensuring safe operations at DOE sites and facilities. Line management includes HQ and field organizations with operational and programmatic responsibilities. The line of responsibility extends from the Secretary downward thorough the Deputy Secretary, the Under Secretaries, the program office

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Act).
[13] See NNSA Act.

managers, the field office managers and, ultimately, the managers directing the work (DOE or contractor).

All managers who report directly to the Secretary, the Deputy Secretary or the Under Secretaries are referred to as Secretarial Officers. A primary responsibility of the Secretarial Officers is to support the Under Secretaries, the Deputy Secretary, and the Secretary in meeting their responsibilities.[14]

The Secretarial Officers responsible for accomplishing work in a safe and environmentally sound manner at DOE-owned or DOE-leased sites and facilities (other than HQ) are Cognizant Secretarial Officers (CSOs). The CSOs are Secretarial Officers with line accountability for a laboratory or a bounded set of facilities.[15] The CSOs provide direction to line organizations in DOE HQ and the field regarding safety management processes and systems. Although the ultimate responsibility for safety rests with the Secretary, the CSOs are responsible for providing direction to the line organizations in their assigned areas and they are accountable for the appropriate and successful implementation of DOE policies and requirements through their line organizations.

CSOs and Field Managers are required to establish Memorandums of Understanding (MOUs) that define the agreed upon procedures governing operations of a particular site, facility or laboratory where multiple program offices conduct work. Copies of the MOUs are distributed to all signatories and to all contractors whose operations are affected by the MOUs.[16] These MOUs should be incorporated into organizational functions, responsibilities, and authorities documents, as appropriate.

Seven CSOs report to the Under Secretary for Energy, Science and Environment:

- Assistant Secretary for Environmental Management;
- Assistant Secretary for Energy Efficiency and Renewable Energy;
- Assistant Secretary for Environment, Safety and Health;
- Assistant Secretary for Fossil Energy;
- Director of the Office of Nuclear Energy, Science and Technology;
- Director of the Office of Science; and
- Director of Office of Civilian Radioactive Waste Management.

Two CSOs report to the Under Secretary for Nuclear Security/Administrator for NNSA:

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[14] See Memorandum from Secretary Spencer Abraham to the Heads of Departmental Elements, July 26, 2001.

[15] See Memorandum from Under Secretary T.J. Glauthier, *Roles and Responsibilities Guiding Principles*, June 2, 2000

[16] *Ibid.*

- Deputy Administrator for Defense Programs[17] and
- Deputy Administrator for Defense Nuclear Nonproliferation.

In addition to the nine CSOs named above, the Director of the Office of Security is a CSO with line responsibility for certain DOE facilities, such as the New Brunswick Laboratory. The Director of the Office of Security reports directly to the Secretary through the Deputy Secretary. Figure 1 shows the DOE organization and indicates the CSOs addressed in this Manual in the shaded boxes. Table 5 lists responsibilities for the various sites and facilities that each CSO is assigned.

Table 6 provides a summary of the safety management functions, responsibilities, and authorities of CSOs. Each CSO functions, responsibilities, and authorities document will establish how each organization will discharge these assigned functions (see Chapter 8).

Table 6 does not provide an exhaustive list of responsibilities. Rather it lists the functions, provides a summary of related responsibilities, and identifies the authorities for those areas. Additional detail regarding the responsibilities for each functional area is provided in the authorities that are listed and their associated guides, as well as organizational functions, responsibilities, and authorities documents. Secretarial Officers should refer to these documents for a more complete discussion of DOE's expectations for the functions listed in the table.

6. SUPPORT ORGANIZATIONS

6.1 Office of Environment, Safety and Health

The Office of Environment, Safety and Health is the Department's corporate safety office (except for aviation safety). As such, the office has unique support functions, responsibilities, and authorities regarding the safety and protection of the environment of DOE facilities and activities. The Assistant Secretary for Environment, Safety and Health is the Department's corporate safety official and represents the Department in ES&H matters and, when requested or directed, assists line management in safety management functions. The Assistant Secretary for Environment, Safety and Health reports to the Under Secretary for Energy, Science and the Environment and, with respect to crosscutting DOE commitments to the Defense Nuclear Facilities Safety Board, to the Deputy Secretary.[18]

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[17] In a memorandum dated June 25, 2003, the Under Secretary for Nuclear Security/Administrator for the National Nuclear Security Administration (NNSA) delegated the authority to serve as the Secretarial Officer for environment, safety, and health matters at the eight NNSA-owned facilities to the Deputy Administrator for Defense Programs. This delegation does not apply to facilities being designed and constructed by the Deputy Administrator for Defense Nuclear Nonproliferation.

[18] Memorandum from Deputy Secretary, Kyle McSlarrow, *Responsibilities for Increased Performance in Meeting DOE Commitments to DNFSB,* March 31, 2003.

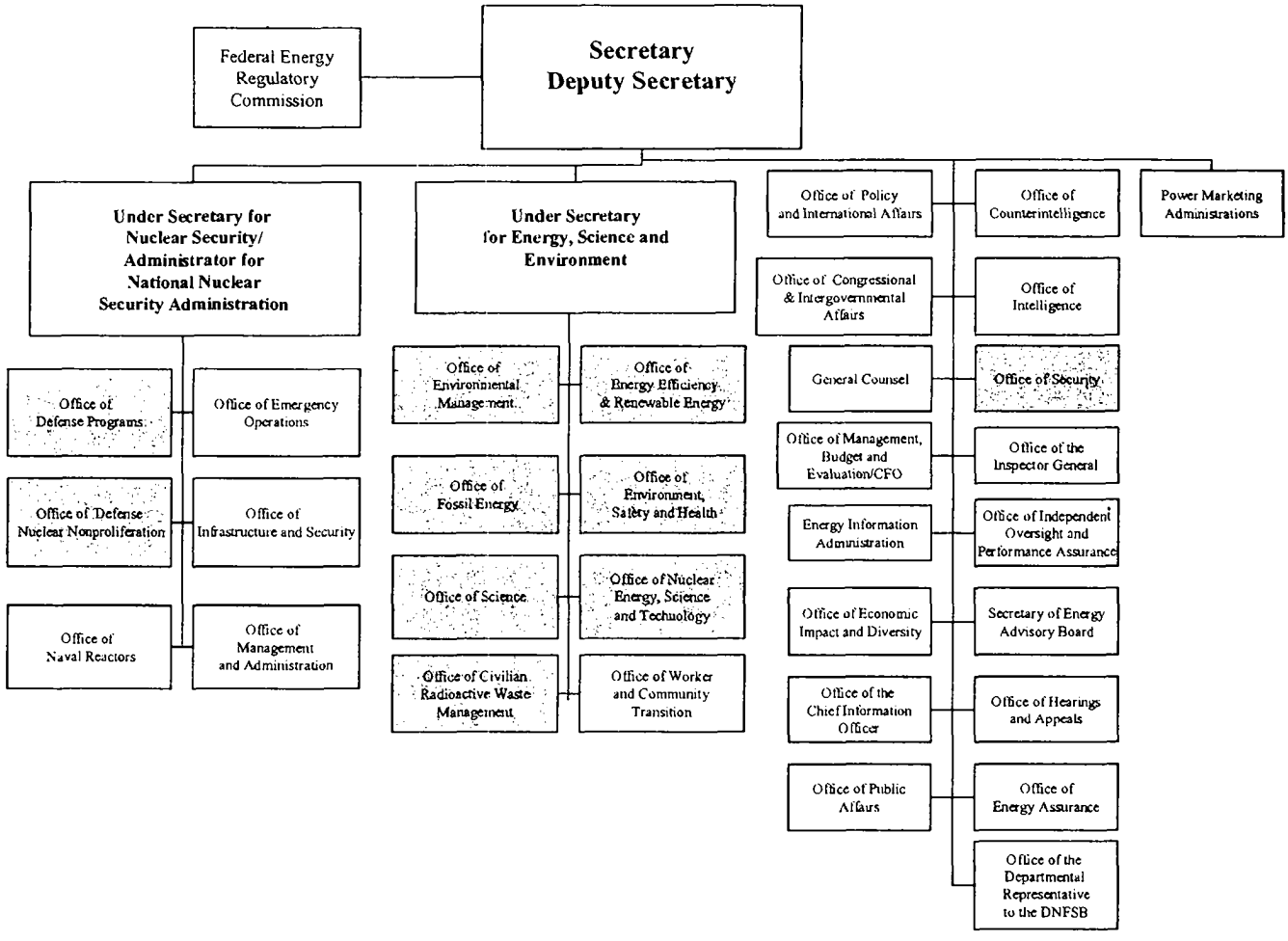

Figure 1. Department of Energy Organization. The shaded boxes indicate the Cognizant Secretarial Officers with responsibilities listed in Table 6.

Executive Order 13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition," requires the Secretary of Energy to assign an individual as Agency environmental executive. The Secretary has assigned that responsibility to the Assistant Secretary for Environment, Safety, and Health.[19] The Assistant Secretary for Environment, Safety and Health also serves as the Designated Agency Safety and Health Officer (DASHO), responsible for establishing the Agency occupational safety and health policy and program to carry out the provisions of Section 19 of the Occupational Safety and Health Act, E.O. 12196 *Occupational Safety And Health Programs For Federal Employees*, and 29 CFR 1960, *Basic Program Elements For Federal Employee Occupational Safety and Health Programs and Related Matters*.[20]

[19]See DOE O 450.1, *Environmental Protection Program*, dated 1-15-03.

[20]See 29 CFR 1960.6.

Office of Environment, Safety and Health safety management functions include the development and maintenance of DOE ES&H policies, regulations, technical standards, and other directives (Orders, Notices, Manuals, and Guides), including this Manual. These documents address the safety of DOE nuclear and non-nuclear operations and activities at DOE facilities and sites, including the safety regulations necessary to meet the provisions of the AEA, as amended by the Price-Anderson Amendments Act (PAAA) of 1988. The Office of Environment, Safety and Health provides corporate support to DOE program and field offices to assist them in meeting safety requirements. The Office of Environment, Safety and Health is also responsible for the DOE enforcement program that subjects contractors to civil penalties for violations of DOE safety regulations that are promulgated under PAAA authority.

Although the NNSA Act found in the National Defense Authorization Act for 2000, Public Law 106-65, 113 Stat.966; 50 USC 2453 et seq. states "Each officer or employee of the Administration, in carrying out any function of the Administration ...shall not be responsible to, or subject to the authority, direction, or control of, any other officer, employee, or agent of the Department of Energy," the *Memorandum of Understanding between the Administrator for the National Nuclear Security Administration and the Assistant Secretary for Environment, Safety and Health* delineates special provisions regarding enforcement at NNSA facilities.[21]

The Office of Environment, Safety and Health analyzes ES&H performance, maintains safety data systems for the Department, advises the Secretary on all issues relevant to ES&H, and provides subject matter expertise on various topics. The Office of Environment, Safety and Health operates programs for the routine collection, analysis, and communication of ES&H performance information. The Office of Environment, Safety and Health is also responsible for a number of crosscutting or corporate programs that support the DOE complex.

Table 7 lists the Assistant Secretary for Environment, Safety and Health's safety management functions, responsibilities, and authorities for support functions.

Like Table 6, Table 7 does not provide an exhaustive list, but a summary of the generic functions and responsibilities for the Assistant Secretary for Environment, Safety and Health and the authorities for those responsibilities. Additional detail regarding these functions and responsibilities is provided in the authorities that are listed and their associated guides, as well as the Office of Environment, Safety and Health functions, responsibilities, and authorities document (see http://www.eh.doe.gov/nsps/ehfra011403.pdf).

The Office of Environment, Safety and Health is also a program office with responsibilities for facilities and programs. Consequently, the Assistant Secretary for the Office of Environment, Safety and Health must also meet the CSO requirements listed in Table 6 for those facilities and programs.

[21] See Memorandum of Understanding for special provisions regarding enforcement at http://tis.eh.doe.gov/enforce/handbks/20010108mou.pdf.

6.2 Office of Independent Oversight and Performance Assurance[22]

Office of Independent Oversight and Performance Assurance is the independent oversight organization for the Secretary of Energy and the NNSA Administrator in the areas of safeguards and security, cyber security, emergency management, and environment, safety and health. As a corporate resource, they conduct evaluations to verify that the Department's safeguards and security interests are protected; the Department can effectively respond to emergencies; and site workers, the public, and the environment are protected from hazardous operations and materials.

The Director of the Office of Independent Oversight and Performance Assurance reports to the Secretary of Energy through the Deputy Secretary. The authority for the Office of Independent Oversight and Performance Assurance to conduct independent oversight was formally established through DOE O 470.2B, *Independent Oversight and Performance Assurance Program,* dated 10-31-02. In July 2001, the Secretary of Energy issued a memorandum to all Departmental elements addressing changes in the Departmental management structure. This memo, and a subsequent memo issued in August 2001 by the Deputy Secretary, directed that independent oversight responsibility for environment, safety and health be incorporated into the Office of Independent Oversight and Performance Assurance.

The safety responsibilities and authorities of the Office of Independent Oversight and Performance Assurance are listed in Table 8. Once again, Table 8 does not provide an exhaustive list, but a summary of the generic functions and responsibilities for the director of the office and the authorities for those areas. Additional detail regarding these functions and responsibilities is provided in the listed authorities and their associated guides and the office's functions, responsibilities, and authorities document.

6.3 Office of Departmental Representative

The Departmental Representative represents the Secretary in regular and continuing interactions between the Department and the Defense Nuclear Facilities Safety Board (DNFSB) and advises the Secretary and other senior managers regarding the DNFSB's priorities, concerns, actions, and plans. The functions, responsibilities, and authorities of the Office of the Departmental Representative are defined in DOE M 140.1-1B, *Interface with the Defense Nuclear Facilities Safety Board*, as modified and supplemented by the Memorandum from Deputy Secretary Kyle McSlarrow, *Responsibilities for Increased Performance in Meeting DOE Commitments to* DNFSB, March 31, 2003. They include:

- Represent the Secretary in regular and continuing interactions with the Board.
- Advise the Secretary, Deputy Secretary, Secretarial Officers, and other Departmental officials on Board priorities, concerns, actions, and plans.

[22] In a memorandum dated December 2, 2003, James T. Campbell, Acting Director of the Office of Management, Budget and Evaluation/Acting CFO requested the establishment of the Office of Security and Safety Performance Assessment (SSA). That office will combine the functions of the Office of Independent Oversight and Performance Assessment with some of the functions of the Office of Security. Those changes when finalized will be addressed in a future revision to this Manual.

- Facilitate communication and cooperation between Departmental elements and the Board and its staff.
- Manage the Department's Safety Issues Management System for DNFSB-related issues, commitments, and actions.
- Coordinate Departmental correspondence with the DNFSB.
- Serve as the initial point of contact for receipt and management of DNFSB recommendations and other correspondence.
- Route correspondence related to cross-cutting safety concerns, recommendations, and other correspondence to the Assistant Secretary for Environment, Safety and Health (ASEH).
- Route correspondence related to a specific site or facility the affected program office with a copy to the ASEH.

7. LINE OF SUCCESSION AND DELEGATION OF AUTHORITY

7.1 Line of Succession

The Department of Energy Organization Act requires the Secretary to designate the order in which the Under Secretary and other officials will act for and perform the functions of the Secretary during the absence or disability of both the Secretary and the Deputy Secretary or in the event of vacancies in both of those offices. DOE O 100.1A, *Secretarial Succession,* dated 2-14-03, or its successor, defines the officials and order of succession in the event of absence or disability of the Secretary.

7.2 Delegation of Authority

This Manual documents the responsibilities and authorities for specific safety functions for DOE senior management. As stated in Chapter 4 and the DOE Organization Act, except as otherwise prohibited by law, the Secretary may delegate the functions of the Secretary to officers and employees of the Department and may authorize successive redelegations. DOE directives and memoranda delegate many of the authorities listed in this Manual. A list of Secretarial delegations and their links can be found at http://www.directives.doe.gov/delegations/currentsdoa.html.

Some authorities within the Department are assigned directly to specific offices or positions within the Department through laws. For example, the NNSA Act assigns authorities directly to the Under Secretary for Nuclear Security/Administrator for NNSA and 10 CFR Part 820 assigns certain responsibilities and authorities to the director of the Office of Enforcement and the Office of the Docketing Clerk within the Office of Price-Anderson Enforcement. In addition, some authorities specifically limit or prohibit delegations. An example of an authorizing document that limits delegation is the NNSA Act, which limits the delegation of the authority, direction, and control of the Under Secretary for Nuclear Security/Administrator for NNSA only to the Deputy Secretary, without further delegation. An example of an authorizing document that prohibits

delegation is 10 CFR 820.61, which assigns the authority for granting exemptions to nuclear safety requirements to specified Secretarial Officers, but prohibits delegation.

DOE officials may delegate the authority to perform certain actions to other officials where it is not prohibited. However, the delegating officials remain accountable for the outcome of the action, even if the function and authority is delegated to an individual or an organization that is not subordinate to the delegating official. Functions can be delegated but never the responsibility for the outcome of that function. In addition, delegations are to persons, not functions.

DOE managers must clearly define the expectations for the managers and staff under them. For example, if a Secretarial Officer expects a subordinate manager or supervisor to review and approve an annual report on environmental consequences that is assigned to the Secretarial Officer, that action (including any delegated authorities) should be clearly delineated in the Secretarial Officer's functions, responsibilities, and authorities document under the responsibilities of that manager or supervisor. If the delegation of authority is not listed, the Secretarial Officer is expected to perform the action.

Delegation of approval authority or other assignment of responsibility does not preclude program offices from issuing requirements, expectations, and guidance affecting that authority or from participating in field element interactions with the operating or management contractor. Program offices must coordinate interactions with a contractor through the DOE contracting officer.

The following provisions apply to the delegation of authority:

a. The delegator (individual delegating the authority) must document all delegations of authority in writing and provide them to the delegate (official or office to whom the authority is delegated). The document delegating the authority must clearly define—

   - the authority that is delegated,
   - the delegate, and
   - all circumstances under which the authority may be exercised, including any restrictions or prohibitions related to further delegation and conditions or qualifications that relate to the delegation.

b. Unless otherwise stated, the delegation remains in effect until rescinded or modified or there is a personnel change. The delegator may rescind or modify the delegation at any time, provided it is done in writing. A copy of the rescission/modification must be provided to the delegate who previously had the delegated authority so the delegate is aware of the rescission and can document the revised delegation in the appropriate functions, responsibilities, and authorities documents.

c. Under Secretaries; Secretarial Officers; field offices; the Office of Environment, Safety and Health; and the Office of Independent Oversight and Performance Assurance must list delegations of authorities that apply to their organizations in their functions, responsibilities, and authorities documents. If any authority listed in this Manual or such functions, responsibilities, and authorities is delegated, that delegation must be identified in the functions, responsibilities, and authorities document.

d. Under Secretaries; Secretarial Officers; field offices; the Office of Environment, Safety and Health; and the Office of Independent Oversight and Performance Assurance must update their functions, responsibilities, and authorities documents at least annually to document the current delegations of authority.

e. If the delegator delegates the authority for a function listed in the functions, responsibilities, and authorities document to another office, the delegator must ask the delegate to review and comment on that aspect of the delegator's functions, responsibilities, and authorities document and resolve the delegate's comments. In addition, the delegate's functions, responsibilities, and authorities document, if applicable, must also document the delegation.

8. ORGANIZATIONAL FUNCTIONS, RESPONSIBLITIES, AND AUTHORITIES DOCUMENTS

In accordance with DOE P 411.1, line, support, oversight, and enforcement organizations within DOE must develop and issue documents that define how their assigned functions and responsibilities are properly discharged. These documents are referred to as functions, responsibilities, and authorities documents (FRAs). As stated in DOE P 411.1, the functions, responsibilities, and authorities documents must clearly define how the organization's functions and responsibilities related to safety are to be carried out. The functions, responsibilities, and authorities documents must clearly define the functions, responsibilities and authorities related to safety. Under Secretaries; CSOs; the Assistant Secretary for Environment, Safety and Health; and the Director of the Office of Independent Oversight and Performance Assurance must develop, issue, and maintain organizational functions, responsibilities, and authorities documents. The functions, responsibilities, and authorities documents should clearly define "who is expected to do what" in an organization, including any delegations of authority. If the functions, responsibilities, and authorities documents fail to document or clearly communicate an expectation, an important safety or environmental protection function might be missed. Consequently, DOE management is responsible for clearly communicating delegated actions and assignments to their subordinate managers, supervisors, and staff.

This Manual documents the flowdown of responsibilities from the Secretary through the Deputy Secretary and the Under Secretaries to the CSOs and support organizations. Similarly, the functions, responsibilities, and authorities documents must document the flowdown of

responsibilities from the Under Secretaries; Secretarial Officers; the Assistant Secretary for Environment, Safety and Health; and the director of the Office of Independent Oversight and Performance Assurance to subordinate managers and organizations, including field organizations, where appropriate.

Each organizational functions, responsibilities, and authorities document must define the safety management functions for the organization and clearly identify who within the organization has the responsibility and authority to perform those functions. Delegations of authority to subordinate managers and staff must be clearly listed and complete. Field office organizations with missions that affect the safety of work performed at DOE facilities are also required to develop and implement functions, responsibilities, and authorities documents.

Functions, responsibilities, and authorities documents must document the safety management functions and responsibilities necessary to accomplish the intent of DOE P 111.1, *Departmental Organization Management System*, as well as other DOE directives, other applicable Government agency regulations, and appropriate programs related to safety. They must also describe the respective organizations and their line management. The format of these functions, responsibilities, and authorities documents is not prescribed, so that each organization can develop a format that is most suitable and effective for its specific needs. However, functions, responsibilities, and authorities documents must provide a breakdown of applicable functions contained in this Manual and other applicable directives related to safety. In addition, the functions, responsibilities, and authorities documents must clearly identify any authority that has been transferred to or from another organization. Delegations of any authorities listed in either this Manual or in an organizational functions, responsibilities, and authorities document must be clearly delineated in the applicable functions, responsibilities, and authorities document. The functions, responsibilities, and authorities document must be updated to reflect any changes to delegations of the authority and must generally describe the process for control and revision of the document.

The functions, responsibilities, and authorities document should be easily accessible to all employees by web page or assigned copies. Copies of current documents of delegation or rescission of delegation that have not yet been incorporated in the functions, responsibilities, and authorities document should be provided with the copy of the functions, responsibilities, and authorities document (electronic or hardcopy).

Although this Manual is part of the DOE Directives System, the associated lower-tier functions, responsibilities, and authorities documents, which describe further delegations of safety authority within each of the Secretarial Offices, are not.

TABLE 1
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES OF THE SECRETARY

Functions	Responsibilities	Authorities and DOE Directives	Delegation	Notes
Succession Planning	Establish a plan for succession of authority.	Atomic Energy Act of 1954 (AEA), Sec. 161		See DOE O 100.1A, *Secretarial Succession*
Environment, Safety, and Health	Advance the goals of restoring, protecting, and enhancing environmental quality and ensuring public health and safety.	Department of Energy (DOE) Organization Act, Sec. 102	Delegation Order 00-002.00A delegates the authority to the Under Secretary for Energy, Science and Environment to— • assert the Federal Government's deliberative process privilege with respect to any environmental management matters arising under the Under Secretary's cognizance and • nominate, appoint, review the term of, and terminate the service of, members of the Environmental Management Site Specific Advisory Board.	This delegation is made to protect internal predecisional DOE documents in judicial or administrative proceedings in situations where the court may require the claim to be formally asserted by an affidavit from an Agency official.

TABLE 1
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES OF THE SECRETARY

Functions	Responsibilities	Authorities and DOE Directives	Delegation	Notes
Federal Employee Occupational Safety and Health (FEOSH)	Establish and maintain an effective and comprehensive FEOSH program.	Occupational Safety and Health Act E.O. 12196, *Occupational Safety and Health Programs for Federal Employees* 29 CFR Part 1960, *Basic Program Elements For Federal Employee Occupational Safety and Health Programs and Related Matters* DOE O 440.1A HQ O 442.1		The Assistant Secretary for Environment, Safety and Health is the Designated Agency Safety and Health Officer, responsible for defining requirements and guidance for the DOE FEOSH program. The Office of Management, Budget and Evaluation is responsible for implementing FEOSH requirements at DOE headquarters facilities. All DOE organizations are responsible for implementing FEOSH.
Rules, Regulations, and Orders for Safety	Prescribe such procedural and administrative rules, regulations, and orders as necessary or appropriate to administer and manage DOE functions.	AEA, Sec. 161 DOE Organization Act, Sec. 644	Delegation Order No. 00-015.00 delegates responsibility to the Office of General Council to notify Congress of the issuance of a rule.	

TABLE 1
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES OF THE SECRETARY

Functions	Responsibilities	Authorities and DOE Directives	Delegation	Notes
Nuclear Safety Policy	Responsible for the safe operation of DOE nuclear facilities.	Secretarial Notice- (SEN-) 35-91	Delegation Order 00-002.00A delegates the following authority to the Under Secretary for Energy, Science and Environment: direct the head of a field organization to curtail or suspend operations of nuclear reactors/nuclear facilities, or related activities when continuing operations might result in an undue risk to the environment and/or to the safety and health of workers or the public. This delegation order does not apply to the National Nuclear Security Administration.	
Special Nuclear Material (SNM)	Authority to authorize delivery of SNM to the Department of Defense at such times as necessary for cores for new military reactors and replacement cores for existing military reactors and for miscellaneous purposes (other than use in atomic weapons) for which material, fabrication, and new reactors the Congress shall have authorized funds.	National Security Decision Directive 282	Delegation Order 00-002.00A delegates the authority to authorize transfer of SNM to the Departments of the Army, Air Force, and Navy (Navy Facilities Engineering Command only) to the Under Secretary for Energy, Science and Environment. Delegation Order 00-003.00 delegates the authority to (1) authorize transfer of SNM to the Department of the Navy and (2) distribute SNM under Section 54 of the AEA.	

TABLE 1
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES OF THE SECRETARY

Functions	Responsibilities	Authorities and DOE Directives	Delegation	Notes
Utilization Facilities	Authority to authorize the Department of Defense to manufacture, produce, or acquire utilization facilities for military purposes for which facilities the Congress shall have authorized funds.	National Security Decision Directive 282	Delegation Order 00-002.00A delegates the authority to authorize the Departments of the Army, Air Force, and Navy to manufacture, produce, or acquire utilization facilities, other than nuclear powered ships, for which Congress has authorized funds to the Under Secretary for Energy, Science and Environment.	
Management of Byproduct Material	Issue rules, regulations, or orders to require— • monitoring, • remedial work, • studies, • inspections, and • any other measures needed to protect health or minimize danger to life or property.	AEA, Sec. 84 (42 USC 2014, 6901, and 2112)	Delegation Order 00-003.00 delegates the Under Secretary for Nuclear Security/ Administration for the NNSA to distribute byproduct material under sections 64 and 82 of the AEA. Delegation Order 00-002.00A delegates the authority to authorize the Departments of the Army, Air Force, and Navy to manufacture, produce, or acquire utilization facilities, other than nuclear powered ships, for which Congress has authorized funds to the Under Secretary for Energy, Science and Environment.	
Civil Penalties/Enforcement	• Impose civil penalties for violations of Department rules, regulations, or Orders. • Compromise, modify, or remit civil penalties.	AEA, Sec. 84 (42 USC 2014, 6901, and 2112) and Sec. 234A 10 CFR Part 820 42 USC 7274d	Delegation Order 00-002.00A delegates the following authority to the Under Secretary for Energy, Science and Environment:	

TABLE 1
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES OF THE SECRETARY

Functions	Responsibilities	Authorities and DOE Directives	Delegation	Notes
Civil Penalties/Enforcement (continued)	• Determine by rule whether nonprofit educational institutions should receive automatic remission of civil penalties. • Appoint an administrative law judge as a presiding officer in enforcement adjudication (10 CFR 820.26). • File final orders that modify initial decisions (10CFR 820.32). • Issue notices of review (10 CFR 820.32). • Issue compliance orders (10 CFR 820.40). • Issue stays of effectiveness for compliance orders (10 CFR 820.43 and 820.67). • Assess civil penalties against any DOE contractor who: (a) employs individuals who are engaged in hazardous substance response or emergency response at DOE nuclear weapons facilities; and (b) fails (i) to provide for the training of such individuals to carry out such hazardous substance response or emergency response, or (ii) to certify to the DOE that such employees are		• formulate and establish enforcement policy; • initiate and conduct investigations; • conduct conferences, administrative hearings, and public hearings; • prepare required reports; and • issue orders. 10 CFR Part 820 assigns the following authority to the director of enforcement: • issue preliminary notices of violation (820.24) and • issue final notices of violation (820.25). The NNSA Act states that "Each officer or employee of the Administration, in carrying out any function of the Administration ...shall not be responsible to, or subject to the authority, direction, or control of, any other officer, employee, or agent of the Department of Energy." See the *Memorandum of Understanding between the Administrator for the National Nuclear Security Administration and the*	

TABLE 1
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES OF THE SECRETARY

Functions	Responsibilities	Authorities and DOE Directives	Delegation	Notes
Civil Penalties/Enforcement (continued)	adequately trained for such response pursuant to orders issued by the DOE relating to employee safety training (including orders numbered 5480.4 and 5480.11).		*Assistant Secretary for Environment, Safety and Health* for special provisions regarding enforcement at NNSA facilities.	
Radiation Protection	• Ultimate authority on actions necessary to comply with the requirements of DOE 5400.5. • Authority to suspend any or all requirements in DOE 5400.5.	DOE O 5400.5	"Relevant DOE authority" (individual or office with assigned responsibility) makes initial determination. Secretary may delegate authority to suspend requirements.	
Radioactive Waste Management	Approve any imposition of more stringent requirements on radioactive waste programs than those imposed by the Nuclear Regulatory Commission.	DOE HQ 250.1	Secretary has sole jurisdiction. Delegation Order 00-002.00A delegates the authority to the Under Secretary for Energy, Science and Environment to sign all documents and take such other actions as may be necessary and appropriate for the submission for publication to the *Federal Register* of notices concerning actions undertaken to implement the authorities and functions provided in the Nuclear Waste Policy Act of 1982 (P.L. 97-425).	The authority delegated does not include rulemaking authority.

TABLE 1
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES OF THE SECRETARY

Functions	Responsibilities	Authorities and DOE Directives	Delegation	Notes
Transuranic Waste	• Manage and store spent nuclear fuel or high-level or transuranic radioactive wastes at facilities regulated by the Nuclear Regulatory Commission. • Determine what waste does not need the degree of isolation required by 40 CFR Part 191 (such waste will be excluded from the definition of transuranic waste).	40 CFR Part 191 DOE M 435.1-1		Determination must be made in consultation with the Administrator of the Environmental Protection Agency.
Nuclear Explosives and Weapons Safety	• Final decisions on nuclear weapon and nuclear weapon system safety, security, and control issues. • Establish policy to ensure surety of all nuclear explosive operations (NEOs) conducted by DOE, including the National Nuclear Security Administration (NNSA), and DOE contractors. • Responsible for surety of all NEOs conducted by DOE, including NNSA, and DOE contractors. • Establish explicit documented agreements with the Secretary of Defense for any overriding reasons for not incorporating modern surety features in the design of nuclear weapons.	DOE O 5610.13 DOE O 452.1B		

TABLE 1
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES OF THE SECRETARY

Functions	Responsibilities	Authorities and DOE Directives	Delegation	Notes
Nuclear Reactor Safety Design Criteria	• Ultimate authority on actions necessary to comply with the requirements of DOE 5480.30. • Approve permanent exemptions from DOE 5480.30.	DOE O 5480.30	Authority may be delegated by the Secretary.	Copy of recommendations for exemptions should be sent to the Assistant Secretary for Environment, Safety and Health so the Assistant Secretary may provide advice to the Secretary.
Facility Safety	• Ultimate authority on actions necessary to comply with the requirements of DOE O 420.1A. • Authority to suspend any or all requirements in DOE O 420.1A.	DOE O 420.1A	Authority may be delegated by the Secretary.	
Startup and Restart of Nuclear Facilities	Approve initial startup of new hazard category 1 and 2 nuclear facilities.	DOE O 425.1C	Authority may be delegated by the Secretary.[23]	
Substance Abuse	• Provide general policy direction for DOE drug testing program. • Determine designated testing positions. • Determine whether to include or exempt certain positions or groups of positions from the drug testing program. • Determine the percentage of employees to be tested.	DOE O 3792.3 E.O. 12564		
DOE Directives System	Approve all DOE Policy documents issued as part of the DOE Directives System.	DOE M 251.1-1A		

[23] In a memorandum dated April 3, 2002, Spencer Abraham delegated the Secretary authorities in DOE O 425.1B to Under Secretary Card for the facilities under his cognizance.

TABLE 1
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES OF THE SECRETARY

Functions	Responsibilities	Authorities and DOE Directives	Delegation	Notes
Aviation Safety	Appoint the Director of the Office of Aviation Management (OAM). Establish an Aviation Board of Directors. Resolve differences between the Under Secretary for Nuclear Security/ Administrator for NNSA and the director of OAM with respect to approval of— • aviation implementation plans and • remotely operated aircraft policies.	DOE O 440.2B		
Defense Nuclear Facilities Safety Board (DNFSB) Interface	• Provide full cooperation with DNFSB, including ready access to Departmental facilities, personnel, and information. • Respond to DNFSB recommendations in accordance with the board's enabling statute.[2] • Provide the DNFSB with implementation plans for each accepted recommendation, and approve any subsequent plan changes. • Provide annual reports to Congress concerning board-related activities of the Department.	AEA Sections 314 and 316 DOE M 140.1-1B		

[2]Atomic Energy Act of 1954 as amended, Sections 311–321 (42 USC § 2286 et. Sec.), *Defense Nuclear Facilities Safety Board.*

TABLE 2
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE DEPUTY SECRETARY

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Chief Operating Officer	• Integrate corporate programs. • Integrate support activities with line programs. • Review all staff and support office policy and guidance that affects the field.	Delegation Order 00-001.00A	No.	
National Nuclear Security Administration (NNSA)	Exercise authority, direction, and control including, but not limited to issuance of regulations, directives, and policy that apply to the NNSA and the authority of the Secretary mentioned in sections 3203, 3213, 3242, 3243, and 3292 of the NNSA Act.	Delegation Order 00-001.00A	No.	
Duties of the Secretary	In the event of the absence of the Secretary, perform the duties of the Secretary.	DOE O 100.1A		
Federal Technical Capability Panel (FTCP)	• Advise and support the FTCP. • Resolve issues where the FTCP cannot reach agreement. • Approve exceptions to the senior technical safety manager qualifications.	DOE M 426.1-1		
Relief from Section 501(b) of the DOE Organization Act	Determine where strict compliance with section 501(b) of the DOE Organization Act would be likely to cause serious harm or injury to the public health, safety, or welfare.	Delegation Order 00-001.00A	No.	
DOE Directives	Chair the Directives Management Board (DMB).	DOE M 251.1-1A		
Defense Nuclear Facilities Safety Board (DNFSB) Interface	• Ensure Department of Energy (DOE) properly addresses DNFSB issues. • Resolve disagreements within DOE on priorities and approaches to DNFSB issues. • Resolve disagreements on which Cognizant Secretarial Officer is responsible for response to DNFSB recommendations, correspondence, or other issues. • Chair the Senior Management Team. • Provide guidance to DOE management on resolution of DNFSB issues. • Brief the Secretary in cases where a unified Departmental position cannot be achieved to respond to a DNFSB issue.	DOE M 140.1-1B		

TABLE 2
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE DEPUTY SECRETARY

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Aviation Safety	Resolve differences between the director of the Office of Aviation Safety and the Administrator for Nuclear Security regarding aviation implementation plans and other aviation issues.	DOE O 440.2B		
Environmental Impact Statements (EISs)	Resolve differences of opinion between the Administrator of the National Nuclear Security Administration and the Assistant Secretary for Environment, Safety and Health regarding EISs or EIS-related matters.	DOE O 451.1B		
Corrective Action Plans (CAPs)	Resolve comments on CAPs that cannot be agreed upon.	DOE O 470.2B		

TABLE 3
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE UNDER SECRETARY FOR ENERGY, SCIENCE AND ENVIRONMENT

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Stop Work	Direct the heads of field organizations to curtail or suspend operations of nuclear reactors, nuclear facilities, or related activities when, in the opinion of the Under Secretary, continuing operations might result in an undue risk to the environment and/or to the safety and health of Departmental or contractor employees or to the public.	Delegation Order 00-002.00A	No.	
Environmental Issues	On a nonexclusive basis, assert the Federal Government's deliberative process privilege with respect to any environmental management matters arising under the Under Secretary's cognizance. This delegation is made to protect internal predecisional Department of Energy (DOE) documents in judicial or administrative proceedings in situations where the court may require the claim to be formally asserted by an affidavit from an Agency official.	Delegation Order 00-002.00A		
Environmental Management Site Specific Advisory Board	Under section 624 of the DOE Organization Act (42 U.S.C. 7234) and in accordance with the Federal Advisory Committee Act (5 U.S.C. App.2), nominate, appoint, renew the term of, and terminate the service of members of the Environmental Management Site Specific Advisory Board.	Delegation Order 00-002.00A		
Radioactive Waste Management	Sign all documents and take such other actions as may be necessary and appropriate for the submission for publication to the *Federal Register* of notices concerning actions undertaken to implement the authorities and functions provided in the Nuclear Waste Policy Act of 1982 (P.L. 97-425).	Delegation Order 00-002.00A	See delegations to the Director, Office of Civilian Radioactive Waste Management in Redelegation Order 00-002.06.	The authority delegated does not include rulemaking authority.

TABLE 3
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE UNDER SECRETARY FOR ENERGY, SCIENCE AND ENVIRONMENT

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Yucca Mountain Site Characterization Progress Reports	Report and transmit site characterization progress reports for the Yucca Mountain site in the State of Nevada to the Nuclear Regulatory Commission, the governor and the legislature of the State of Nevada, and other interested parties, including the U.S. Congress. The reports are required under section 113(b)(3) of the Nuclear Waste Policy Act of 1982, as amended (P.L. 97-425, as amended by Title V, Subtitle A, of P.L. 100-203).	Delegation Order 00-002.00A		Report on a semiannual basis. Requires the concurrence by the General Counsel and the Assistant Secretary for Congressional and Intergovernmental Affairs before transmittal.
Transfer of Special Nuclear Material (SNM)	• Authorize transfer of SNM to the Departments of the Army, Air Force, and Navy (Navy Facilities Engineering Command only) in such quantities and at such times as necessary for cores for new military reactors, for replacement cores for existing military reactors, and for miscellaneous purposes (other than use in atomic weapons) for which material, fabrication, and new reactors the Congress has authorized funds. • Authorize the Departments of the Army, Air Force, and Navy to manufacture, produce, or acquire utilization facilities, other than nuclear powered ships, for which Congress has authorized funds.	Delegation Order 00-002.00A	See redelegation to the Director for Nuclear Energy, Science, and Technology in Redelegation Order No. 00-002.05.	
Civil Penalties/Enforcement[24]	• Formulate and establish enforcement policy. • Initiate and conduct investigations. • Conduct conferences, administrative hearings, and public hearings. • Prepare required reports. • Issue orders.	Delegation Order 00-002.00A		See AEA, Sec. 84 (42USC 2014, 6901, 2112) and Sec. 234A and 10 CFR Part 820.

[24]See the *Memorandum of Understanding between the Administrator for the National Nuclear Security Administration and the Assistant Secretary for Environment, Safety and Health* for special provisions regarding enforcement at NNSA facilities.

TABLE 4
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE UNDER SECRETARY FOR NUCLEAR SECURITY/ADMINISTRATOR FOR THE NATIONAL NUCLEAR SECURITY ADMINISTRATION (NNSA)

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Environment, Safety, and Health	• Protect the environment and the safety and health of public and workers at NNSA facilities and sites. • Comply with applicable requirements. • Issue and meet procedures for meeting requirements.	National Nuclear Security Administration Act, Oct. 5, 1999, (NNSA Act)	Deputy Administrator for Defense Programs by memo from Linton Brooks, dated June 25, 2003.	
Integrated Safety Management	Formal organized process for planning, organizing, assessing, and improving the safe conduct of work.	NNSA Act DOE P 450.4		
Weapons Stockpile Safety	Enhance safety, reliability, and performance.	NNSA Act		
Special Nuclear Material (SNM)	• Authorize transfer to the Department of the Navy. • Distribute SNM under Section 54 of the Atomic Energy Act of 1954 (AEA).	Delegation Order No. 00-003.00	Authority may be delegated to the Deputy Administrator for Naval Reactors and may not be delegated further.	
Utilization Facilities	Authorize the Department of the Navy to manufacture, produce, or acquire utilization facilities (nuclear powered ships) for which Congress has authorized funds.	Delegation Order No. 00-003.00	Authority may be delegated to the Deputy Administrator for Naval Reactors and may not be delegated further.	
Source and Byproduct Material	Distribute source and byproduct material under Sections 64 and 82 of the AEA.	Delegation Order No. 00-003.00		

TABLE 5
COGNIZANT SECRETARIAL OFFICER (CSO) ASSIGNMENTS

Symbol	CSO	Site/Laboratory
NA-1	Under Secretary for Nuclear Security/Administrator for the National Nuclear Security Administration (Deputy Administrator for Defense Programs and Deputy Administrator for Defense Nuclear Nonproliferation[25])	Los Alamos National Laboratory
		Sandia National Laboratories
		Pantex Plant
		Kansas City Plant
		Fissile Material Disposition Facilities
		Savannah River Tritium Facilities
		Lawrence Livermore National Laboratory
		Y-12
		Nevada Test Site
EM-1	Assistant Secretary for Environmental Management	Office of River Protection
		Mound Environmental Management Project
		Grand Junction Project Office
		Waste Isolation Pilot Project
		Fernald Environmental Management Project
		West Valley Demonstration Project
		Ashtabula Environmental Management Project
		Columbus Environmental Management Project
		Hanford Site
		Pacific Northwest National Laboratory
		Fast Flux Test Facility
		Rocky Flats Environmental Technology Site (RFETS)
		Savannah River Site
		Idaho Nuclear Technology and Engineering Center at INL
		Paducah/Portsmouth
		ETTP, K-25, Weldon Spring, etc
		Energy Technology Engineering Center
SC-1	Director of the Office of Science	Argonne National Laboratory—East
		Brookhaven National Laboratory
		Ames Laboratory
		Princeton Plasma Physics Laboratory
		Fermi National Accelerator Laboratory
		Environmental Measurements Laboratory
		Oak Ridge National Laboratory
		Thomas Jefferson National Accelerator Facility
		Lawrence Berkeley National Laboratory
		Stanford Linear Accelerator Center
EE-1	Assistant Secretary for Energy Efficiency and Renewable Energy	National Renewable Energy Laboratory
EH-1	Assistant Secretary for Environment, Safety and Health	Radiological and Environmental Sciences Laboratory
NE-1	Director of the Office of Nuclear	Idaho National Laboratory (INL)

[25] In a memorandum dated June 25, 2003, the Under Secretary for Nuclear Security/Administrator for the National Nuclear Security Administration (NNSA) delegated the authority to serve as the Secretarial Officer for environment, safety, and health matters at the eight NNSA-owned facilities to the Deputy Administrator for Defense Programs. This delegation does not apply to facilities being designed and constructed by the Deputy Administrator for Defense Nuclear Nonproliferation. The division of Program Secretarial Officer responsibility for NNSA facilities is addressed in the NNSA FRA document.

TABLE 5
COGNIZANT SECRETARIAL OFFICER (CSO) ASSIGNMENTS

Symbol	CSO	Site/Laboratory
	Energy, Science and Technology	Test Reactor Area
		Argonne National Laboratory—West
SO-1	Director of the Office of Security,	New Brunswick Laboratory[26]
FE-1	Assistant Secretary for Fossil Energy	National Energy Technology Laboratory - Morgantown
		National Energy Technology Laboratory - Pittsburgh
		Arctic Energy Office
		Albany Research Center
		National Petroleum Technology Office
		Naval Petroleum Reserve - California
		Rocky Mountain Oil Field Testing Center
		Strategic Petroleum Reserve - Bryan Mound
		Strategic Petroleum Reserve - Bill Hill
		Strategic Petroleum Reserve - Bayou Choctow
		Strategic Petroleum Reserve Project Office
		Strategic Petroleum Reserve - West Hackberry
RW-1	Director of the Office of Civilian Radioactive Waste Management	Yucca Mountain Site
ME-1	Director of the Office of Management, Budget, and Evaluation	DOE Headquarters Buildings

[26]Reports through the Chicago Operations Office.

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Integrated Safety Management (ISM)	ISM safety system descriptions (including the Environmental Management System or EMS) that addresses the five core functions: • Define the scope of work. • Analyze the hazards. Develop and implement hazard controls. • Perform work within controls. • Provide feedback and continuous improvement.	DOE P 450.4 DOE O 450.1 48 CFR 970.5204-2 48 CFR 970.5215-3	Yes.	Annual review. EMS to be implemented by 12-05.
Safety Basis	• Safety Evaluation Report. • Safety Basis Information System (SBIS). • Documented Safety Analysis (DSA). • Technical Safety Requirements (TSRs) and other hazard controls. • Preliminary DSA. • Unreviewed safety questions (USQs). • Alternate methodologies for DSAs. • Hazard Categorization.	10 CFR Part 830, Subpart B DOE O 420.1A 48 CFR 970.5223-1	Yes.	Annual update for DSA and TSRs. Annual submittal for USQs. Quarterly reports to SBIS. Concurrence from the Office of Environment, Safety and Health is required for DSA/TSR methodology other than safe harbor methodologies in Table 2 of Appendix A to 10 CFR Part 830.
Radiation Protection	• Radiation protection program (RPP). • Monitoring programs. • As low as reasonably achievable (ALARA) process. • Notification to the public.	10 CFR Part 835 DOE P 441.1 DOE O 5400.5	Yes.	Update RPP when changes are made to program.
Accident Investigation	• Type A and B investigations. • Investigation reports. • Corrective action plans (CAPs).	DOE O 225.1A	Yes.	

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Beryllium Disease Prevention	• Record keeping. • Chronic Beryllium Disease Prevention Program. • Baseline beryllium inventory. • Formal exposure reduction and minimization program. • Respiratory protection program. • Medical surveillance program. • Beryllium training program. • Postings. • Reporting beryllium sensitization.	10 CFR Part 850 29 CFR 1910	Yes.	
Quality Assurance (QA)	• QA Program • Management and independent assessments • Software QA (SQA) • Suspect/counterfeit parts	10 CFR Part 830, Subpart A DOE O 414.1A DOE N 411.1 DOE O 440.1A	Yes.	SQA requirements must be updated when DOE directive on SQA replaces DOE N 411.1.
Startup and Restart of Nuclear Facilities	• DOE operational readiness reviews or readiness assessments. • Startup notification reports.	DOE O 425.1C	Yes.	
Radioactive Waste Management	• Implement the requirements of DOE O 435.1. • Ensure field element managers meet the requirements of DOE M 435.1-1.	DOE O 435.1 DOE M 435.1-1	Yes (see DOE M 435.1-1).	
ES&H reporting	• Log of occupational fatalities, injuries, and illnesses. • Log of work-related injuries. • Summary of work-related injuries. • Individual accident/incident reports. • Injury and illness reports. • Radiological exposure data. • ES&H assessment reports. • Summary report of ES&H self-assessments.	DOE N 231.1 DOE M 231.1-1 DOE M 231.1-2 DOE O 231.1A 10 CFR Part 820 40 CFR Part 61 DOE O 450.1 E.O. 13101 E.O. 13148 10 CFR Part 835	Yes.	*Annual reports:* • ES&H assessment reports and the summary report of ES&H self-assessments. • NESHAP reports. • Report on the Department's progress in implementing E.O. 13101. *Quarterly reports:* • Individual accident/incident reports and injury and illness reports.

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
ES&H Reporting (continued)	• Report of fatalities or multiple hospitalizations. • Occurrence reports. • Implementation procedures. • Event categorization and notification of significant occurrences. • Reports of noncompliance with nuclear safety regulations (recommended reports). • DOE annual site environmental reports. • National emission standards for hazardous air pollutants (NESHAP) reports. • DOE data for annual reporting to Office of Management and Budget (OMB) under E.O.s 13101 and 13148. • Performance analysis reports and identification and reporting of recurring events.			• Reports on periodic performance analysis and identification and reporting of recurring events. *45 day reports:* Submit Occurrence Reporting and Processing System final reports within 45 days or provide an update report (note: occurrence reports are normally contractor reports, but DOE has responsibilities with respect to the reports as defined in DOE M 231.1-2).
Civil Penalties/ Enforcement	Referrals to the Office of Price-Anderson Enforcement and support throughout the enforcement process.	10 CFR Part 820 Price-Anderson Amendments Act Atomic Energy Act of 1954	No.	
Lessons Learned Program	Development and dissemination of lessons learned.	DOE M 140.1-1B DOE O 225.1A DOE N 231.1 DOE O 231.1A DOE M 231.1-2 DOE O 425.1C DOE O 440.1A DOE O 451.1B DOE O 460.1B DOE O 5480.19	Yes.	

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Corrective Action Plans (CAPs)	CAPs. CAP verification.	DOE O 225.1A DOE O 414.1A DOE O 470.2B	Yes.	
Nuclear and Explosives and Weapon Safety (Facility Safety)	• Authorization agreements. • Nuclear Explosives Weapons Surety Program. • Nuclear Weapons Surveillance Program. • Nuclear explosive safety study reports. • Certification that nuclear explosive surety standards have been met. • Nuclear explosive safety study reports. • Nuclear explosive rules. • Authorizations for nuclear explosive operations (NEOs). • Comprehensive safety program for NEOs. • Nuclear Explosives Safety Program. • Safety basis. • Operation hazard analysis reports. • Facility safety analyses. • Hazard controls. • Implementation plans for nuclear and explosive safety design criteria.	DOE O 420.1A (paragraph 4.1) DOE O 452.1B DOE O 452.2B	Yes.	
Fire Protection (Facility Safety)	Fire protection program.	DOE O 420.1A (paragraph 4.2)	Yes.	
Criticality Safety (Facility Safety)	Nuclear criticality safety program.	DOE O 420.1A (paragraph 4.3)	Yes.	
Natural Phenomena Hazards (NPHs) (Facility Safety)	• NPH assessments. • Seismic reports. • Dam safety reports.	DOE O 420.1A (paragraph 4.4) E.O.s 12699 and 12941 P.L. 104-303 DOE O 5480.4	Yes.	Update as necessary, at least every 10 years.

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Safety System Engineer Program (Facility Safety)	Cognizant system engineer.	DOE O 420.1A (paragraph 4.5)	Yes.	
Configuration Management (Facility Safety)	Configuration management plans.	DOE O 420.1A (paragraph 4.5) DOE O 452.2B	Yes.	
Maintenance	Maintenance implementation plans (MIPs)	DOE O 433.1	Yes.	Update MIPs every 2 years.
Worker Protection	• Notification of excesses of illnesses or injuries that require epidemiological analyses. • Records of occupational fatalities, injuries, and illnesses. • Reports of subcontractor accident information. • Worker Protection Program. • Postings. • Accident investigations. • Hazard prevention/abatement program. • Workplace inspections. • Safety and health plans. • Fire Protection Program (life safety). • Industrial hygiene programs. • Pressure safety policies. • Motor vehicle safety programs. • Suspect and counterfeit part controls. • Construction hazards analyses. • Occupational Medical Program. • Employee job tasks and hazards analysis information. • Summaries of workplace exposures. • Health examinations.	DOE M 231.1-1 DOE O 440.1A	Yes, except for exemptions related to Occupational Safety and Health Administration (OSHA) standards.	

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
	• Employee counseling and health promotion.			
Firearm Safety (Facility Safety)	Firearms safety policies and procedures.	DOE O 440.1A	Yes, except for exemptions related to OSHA standards.	
Explosives Safety (other than nuclear weapons)	• Process hazards analyses. • List of explosive and hazardous materials. • Process hazards analyses. • Safety analysis of explosives facilities. • Classification of hazards contents. • Access control procedures. • Storage review programs. • Placards. • Explosives emergency control plans.	DOE M 440.1-1	Yes, except for exemptions related to OSHA standards.	
Aviation Safety	• Aviation implementation plans. • Maintenance and inspection programs. • Aviation safety programs.	DOE O 440.2B	Yes, except for site General Counsel authority to approve certain travel.	

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
National Environmental Policy Act (NEPA) Compliance	• Annual mitigation reports. • Annual NEPA planning summaries. • NEPA Compliance Program. • NEPA QA plans. • Environmental impact statements and associated notices. • Environmental assessments. • Records of Decision. • Public participation plans. • Mitigation action plans. • Independent reviews of proposed actions under NEPA. • Review of DOE NEPA compliance. • EMS.	DOE O 450.1 DOE O 451.1B DOE M 231.1-1 NEPA DOE P 141.2 10 CFR Part 1021	DOE O 451.1B contains specific provisions on delegation.	
Conduct of Operations	Ensure conduct of operations provisions are incorporated into contractor programs and procedures.	DOE O 5480.19	Yes.	
Biological Agents	Program for biological agents.	DOE N 450.7	Yes.	

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Packaging and Transportation Safety	• Packaging approval. • Transportation Safety Analysis Report (TSAR). • Transportation plan. • Onsite packaging and transfer procedures. • Carrier evaluations. • Reports to Tracking and Communications System. • Packaging and transportation plans • Transportation system risk assessments. • Implementation Plan for DOE O 461.1. • Packaging and transportation procedures. • Letter to governor or tribal leader for offsite. • Transportation Safety Document. • Safety Analysis Report for Packaging.	DOE O 460.1B DOE O 460.2 DOE O 461.1 DOE M 460.2-1	Yes.	Update TSAR every 5 years.
Federal Employee Occupational Safety and Health (FEOSH)	• FEOSH program. • Federal Employee Industrial Health Program. • Federal Employee Occupational Medical Program. • Designated Cognizant Secretarial Officer Occupational Safety and Health Manager.	DOE O 3790.1B, Chapter VIII (medical) DOE HQ O 442.1 DOE O 440.1A	Yes.	

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Appraisals, Assessments, and Self-Assessments	Perform various appraisals and assessments as required by DOE directives.	10 CFR Part 830, Subpart A DOE O 414.1A DOE O 420.1A DOE P 450.5 DOE O 450.1 Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 2002-2, *Configuration of Vital Safety Systems*	Yes.	
Line management environment, health and safety (ES&H) oversight	• Monitor field element and contractor performance • When appropriate, participate in field element appraisals, assessments, surveillances and walkthroughs of contractor facilities and activities • Conduct onsite reviews of field element's performance, including verifications of their appraisals of the contractor, as necessary	DOE P 450.5	Yes	
Substance Abuse	Workplace substance abuse program.	10 CFR Part 707 DOE N 471.3 DOE O 350.1 DOE O 440.1A DOE O 3792.3 48 CFR 970.2305 48 CFR 970.5223 48 CFR 923.570	Yes.	
Employee Protection	Posted regulations.	10 CFR Part 708 DOE O 442.1A 48 CFR 970.0309	Yes.	Quarterly reports.

TABLE 6
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR COGNIZANT SECRETARIAL OFFICERS

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Organizational Staffing and Competency	• Employee training and qualification. • DOE staffing plans. • Oversight of contractor training and qualification plans. • Facilities representatives program.	10 CFR 830.122 DOE 5480.20A DOE M 426.1-1 DOE O 360.1B	Yes.	
DOE Technical Standards Program	Assign technical standards managers for DOE offices and contractors.	DOE O 252.1 P.L. 104-113 OMB Circular A-119	Yes.	
Organization Functions, Responsibilities, and Authorities Documents	Functions, responsibilities, and authorities document for organizations.	DOE P 411.1 DOE M 411.1-1C	No.	Update organizational Functions, Responsibilities, and Authorities documents annually.
DNFSB Interfacc	• Assign responsible manager for assigned issuc. • Implement DOE policy with respect to the DNFSB. • Support other DOE managers in responding to DNFSB. • Designate Point of Contact.	DOE M 140.1-1B	Yes	

TABLE 7
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE ASSISTANT SECRETARY OF ENVIRONMENT, SAFETY AND HEALTH

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Environmental Issues	As the Agency environmental executive, monitor environmental programs related to— • procurement and acquisition, • waste prevention and recycling, and • reports on progress. Advise the Secretary with respect to conformance of the Department's activities to environmental protection laws and principles, and conduct a comprehensive program of research and development on the environmental effects of energy technologies and programs.	DOE O 450.1 The Department of Energy (DOE) Organization Act (P.L. 95-91, as amended), Sec. 203 (a)(3)	Yes.	
National Environmental Policy Act (NEPA)[27]	• Issue notices of intent for environmental impact statements (EISs). • Approve EISs. • Independent review of proposed actions under NEPA. • Review of DOE NEPA compliance. • Notices of intent for EISs. • Policy, guidance, and oversight for NEPA compliance.	DOE O 451.1B 10 CFR Part 1021	Yes.	

[27]The Administrator for the National Nuclear Security Administration (NNSA) will approve or adopt the environmental impact statement and related documents for specific NNSA proposals that the Administrator determines (after consultation with the Assistant Secretary for Environment, Safety and Health) do not warrant Secretarial attention.

TABLE 7
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE ASSISTANT SECRETARY OF ENVIRONMENT, SAFETY AND HEALTH

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Environment, Safety, and Health (ES&H) Policies, Regulations, Directives, and Guidance (Rules, Regulations, and Orders for Safety	• Policies. • Regulations/rules. • Orders. • Notices. • Manuals. • Guides.	Administrative Procedure Act (APA) DOE O 231.1A DOE M 231.1-1 DOE M 231.1-2 DOE O 251.1A DOE M 251.1-1A DOE P 410.1A AEA Price-Anderson Amendments Act (PAAA) E.O. 13148 DOE O 450.1 DOE P 411.1	Some authorities cannot be delegated.	The NNSA Act states that "Each officer or employee of the Administration, in carrying out any function of the Administration ...shall not be responsible to, or subject to the authority, direction, or control of, any other officer, employee, or agent of the Department of Energy."
Federal Employee Occupational Safety and Health (FEOSH)	Requirements and guidance for the Department of Energy (DOE) FEOSH program.	DOE O 440.1A	No.	The NNSA Act states that "Each officer or employee of the Administration, in carrying out any function of the Administration ...shall not be responsible to, or subject to the authority, direction, or control of, any other officer, employee, or agent of the Department of Energy."
Budget	• Office of Environment, Safety and Health budget. • Review of operating contract budgets to ensure ES&H is adequately addressed.	DOE O 130.1 DOE O 135.1 Office of Management and Budget (OMB) Circular A-11	No.	

TABLE 7
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE ASSISTANT SECRETARY OF ENVIRONMENT, SAFETY AND HEALTH

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Safety Analysis, Hazard Controls, and Hazard Categorization	• Requirements and guidance. • Concurrence on alternate methodologies other than safe harbor methodologies in Table 2 to Appendix A of 10 CFR Part 830. • Concurrence on other documents when requested. • Safety Basis Information System (SBIS).	10 CFR Part 830, Subpart B 29 CFR 1910.1450 29 CFR 1910.120 DOE O 420.1A DOE O 420.2A	Yes.	Annual update for Documented Safety Analyses and Technical Safety Requirements. Annual submittal for unreviewed safety questions. Quarterly reports to SBIS. The NNSA Act states that "Each officer or employee of the Administration, in carrying out any function of the Administration ...shall not be responsible to, or subject to the authority, direction, or control of, any other officer, employee, or agent of the Department of Energy."
Radiation Protection	Approve— • planned special exposures, • alternate dosimetry, and • exemptions. Issue policies and guidance.	10 CFR Part 835 DOE P 441.1 DOE O 5400.5	Yes, except for exemptions.	
Startup and Restart of Nuclear Facilities	• Conduct independent reviews of startups in coordination with the Program Secretarial Officer. • Review and comment on startup and restart procedures, implementation plans, plans of action, and final reports.	DOE O 425.1C DOE O 420.2A	Yes.	

TABLE 7
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE ASSISTANT SECRETARY OF ENVIRONMENT, SAFETY AND HEALTH

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Corrective Action Plans (CAPs)	• Monitor and report on the Corrective Action Management Program (CAMP). • Review CAPs from Type A & B investigations. • Enter all findings and Judgments of Need into the Corrective Action Tracking System (CATS). • Maintain the CATS database.	DOE O 225.1A DOE O 414.1A DOE O 470.2B	Yes.	
ES&H Reporting	Maintain the following reporting systems: • Computerized Accident/Incident Reporting System (CAIRS), • Occurrence Reporting and Processing System, and • Noncompliance Tracking System. Annual corporate reports to OMB on Department's progress on E.O. 13101 and 13148.	DOE N 231.1 DOE O 231.1A DOE M 231.1-1 DOE M 231.1-2 E.O. 13101 E.O. 13148	Yes.	Annual ES&H assessment reports and annual summary report of ES&H self-assessment. Annual report on the Department's progress in implementing E.O. 13101 and 13148.
Accident Investigation	• Type A and B investigations. • Notifications. • Lessons learned. • CAPs. • Investigation reports. • Appoint officials for Type A Boards.	DOE O 225.1A	Yes.	

TABLE 7
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE ASSISTANT SECRETARY OF ENVIRONMENT, SAFETY AND HEALTH

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Reporting to External Organizations	Reports to external agencies for which the Office of Environment, Safety and Health is responsible include— • seismic reports, • dam safety reports, • pollution prevention and abatement plans, • annual summary of occupational illnesses and injuries, • annual reports to the Environmental Protection Agency, • historical/cultural reporting, and • Interagency Nuclear Safety Review Panel reports of nuclear space applications to the President's Science Advisor.	OMB A-119 E.O. 13148 E.O. 12941 P.L. 104-303, the Water Resources Development Act of 1996 Presidential Directive PD/NSC/25		
DOE Technical Standards	• Technical Standards Program. • DOE standards executive to represent DOE's interests on consensus standards-setting organizations and the Interagency Committee on Standards Policy. • Report to meet OMB Circular A-119.	DOE O 252.1 DOE P 251.1 DOE M 251.1-1A P.L. 104-113 OMB A-119	Yes.	Annual report to meet OMB-119.
Exemptions	Grant or concur as authorized in regulations or Orders.	10 CFR Part 820, Subpart E DOE M 251.1-1A Exemption processes as specified in individual DOE Orders Exemption processes as authorized for external regulations	See authorities.	

TABLE 7
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE ASSISTANT SECRETARY OF ENVIRONMENT, SAFETY AND HEALTH

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Quality Assurance (QA)	• DOE directives and regulation for QA • Office of Environment, Safety, and Health QA Program • Software QA • Suspect/Counterfeit Parts	10 CFR Part 830, Subpart A DOE O 414.1A DOE N 411.1 DOE O 440.1A	Yes, however promulgation of regulations must follow APA and DOE rulemaking procedures.	SQA requirements must be updated when DOE directive on SQA replaces DOE N 411.1.
Fire Protection (facility safety)	Authority having jurisdiction (in the Office of Environment, Safety and Health).	DOE O 420.1A (sec. 4.2)	Yes.	
Lessons Learned, Feedback, and Improvement	Develop and disseminate lessons learned.	DOE M 140.1-1B DOE O 225.1A DOE N 231.1 DOE O 231.1A DOE M 231.1-2 DOE O 414.1A DOE O 425.1C DOE O 440.1A DOE O 451.1B DOE O 460.1B DOE O 5480.19		
DOE Laboratory Accreditation Program (DOELAP)	Develop and implement the DOELAP in coordination with Cognizant Secretarial Officers, contractors, and industry.	10 CFR 835		
DNFSB Interface	• Act as the Deputy Secretary's agent on crosscutting issues. • Work with line management and program offices to identify and address obstacles that arise in the course of implementing corrective actions in response to issues that require action by multiple organizations. • Evaluate planned actions to ensure that collectively they are responsive to the DNFSB concerns and underlying causes.	Memorandum from Deputy Secretary McSlarrow, March 31, 2003 Letter from Deputy Secretary McSlarrow to DNFSB Chairman Conway, March 18, 2003 DOE M 140.1-1B	Yes.	Monthly reports to Deputy Secretary on status and problems.

TABLE 7
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE ASSISTANT SECRETARY OF ENVIRONMENT, SAFETY AND HEALTH

Functions	Responsibilities	Authorities	Can authority be delegated?	Notes
Civil Penalties/ Enforcement	Enforcement program.	10 CFR Part 820 Price-Anderson Amendments Act Atomic Energy Act of 1954, Section 234a Memorandum of Understanding between the Administrator for the National Nuclear Security Administration and the Assistant Secretary for Environment, Safety and Health, January 12, 2001	Most enforcement activities are assigned directly to the Office of Enforcement by 10 CFR Part 820. These cannot be delegated. In addition, 10 CFR Part 820 prohibits delegation of exemption authority.	The NNSA Act states that "Each officer or employee of the Administration, in carrying out any function of the Administration ...shall not be responsible to, or subject to the authority, direction, or control of, any other officer, employee, or agent of the Department of Energy."
Safety Management Functions, Responsibilities and Authorities Manual (DOE M 411.1-1) and Organizational Functions, Responsibilities and Authorities document	• Update DOE M 411.1-1 every six months. • Post DOE M 411.1-1 and any overriding Secretarial Memoranda on web page. • Update EH Functions, Responsibilities, and Authorities document annually.	DOE M 411.1-1C		

TABLE 8
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE DIRECTOR OF THE OFFICE OF INDEPENDENT OVERSIGHT AND PERFORMANCE ASSURANCE

Responsibility Topic	Subtopics/Deliverables	Authorities	Can authority be delegated?	Notes
Independent oversight of Environment, Safety, and Health (ES&H)	• Develop and maintain DOE ES&H independent oversight and performance assurance policies, procedures, standards, and guidelines. • Advise appropriate site and Headquarters managers promptly (within 24 hours) of major vulnerabilities or imminent danger identified during appraisal activities at evaluated sites. • Direct, manage, and conduct ES&H independent oversight programs. • Provide DOE managers with independent evaluations of environment, safety, and health policies, programs, and implementation.	DOE O 470.2B	No.	
Appraisals, Assessments, and Self-Assessments	• Coordinate the scheduling, notification, and planning of appraisals with appropriate cognizant secretarial officers and heads of field elements. • Ensure environment, safety, and health On a selected basis, conduct appraisals to verify and validate the effectiveness of corrective actions and to confirm closure of findings. • Coordinate with the applicable DOE policy organizations to resolve environment, safety, and health policy findings or deficiencies and to ensure accurate interpretation of requirements. • Maintain awareness of the status of findings and ratings identified during appraisals. • Brief senior DOE officials, including the Under Secretaries, cognizant	DOE O 470.2B	No.	

TABLE 8
FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES FOR THE DIRECTOR OF THE OFFICE OF INDEPENDENT OVERSIGHT AND PERFORMANCE ASSURANCE

Responsibility Topic	Subtopics/Deliverables	Authorities	Can authority be delegated?	Notes
Appraisals, Assessments, and Self-Assessments (continued)	secretarial officers, the Office of Security, DOE policy organizations, and the managers of DOE sites, on the results of appraisal activities. • Ensure comments are resolved or elevate comments until resolution is obtained. If needed, elevate comments to the Deputy Secretary and/or the Secretary for resolution.			
Corrective Action Plans (CAPs)	Review CAPs and provide comments, when necessary, within prescribed time frames.	DOE O 470.2B	No.	
Corrective Action Tracking System (CATS)	Ensure ES&H findings (and related information) are entered into the CATS.	DOE O 470.2B	No.	
Civil Penalties/ Enforcement	Coordinate with the Office of Price-Anderson Enforcement when appraisal activities identify any potential noncompliance with rules, consistent with the Price-Anderson Amendments Act.	DOE O 470.2B	No.	
Organizational Staffing and Competency	Implement a Technical Qualification Program for all DOE employees whose duties and responsibilities require them to provide oversight that could impact the safe operation of a defense nuclear facility.	DOE M 426.1-1	Yes.	
Organization Functions, Responsibilities, and Authorities Documents	Maintain the OA Functions, Responsibilities, and Authorities Document.	DOE P 411.1 DOE M 411.1-1C	No.	Update annually
Defense Nuclear Facilities Safety Board (DNFSB) Interface	Cooperate with the DNFSB, including ready access to OA inspection results, and respond to DNFSB recommendations, as applicable.	DOE M 140.1-1B	Yes.	

APPENDIX A. ACRONYMS AND ABBREVIATIONS

AEA	Atomic Energy Act of 1954
APA	Administrative Procedures Act
CAP	Corrective Action Plan
CATS	Corrective Action Tracking System
CFR	Code of Federal Regulations
CSO	Cognizant Secretarial Officer
DASHO	Designated Agency Safety and Health Officer
Department	Department of Energy
DMB	Directives Management Board
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
DOELAP	DOE Laboratory Accreditation Program
DSA	Documented Safety Analysis
EIS	environmental impact statement
EMS	Environmental Management System
E.O.	Executive order
ES&H	environment, safety, and health
FEM	field element manager
FEOSH	Federal employee occupational safety and health
FTCP	Federal Technical Capability Panel
HQ	(DOE) Headquarters
ISM	Integrated Safety Management
NEO	nuclear explosive operation
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NNSA	National Nuclear Security Administration
NPH	natural phenomenon hazard

OAM	Office of Aviation Management
OMB	Office of Management and Budget
OPI	Office of Primary Interest
PAAA	Price-Anderson Amendments Act
QA	quality assurance
RPP	radiation protection program
SBIS	Safety Basis Information System
Secretary	Secretary of Energy
SNM	Special Nuclear Material
SQA	Software Quality Assurance
TSR	Technical Safety Requirements
TSAR	Transportation Safety Analysis Report
USQ	unreviewed safety question

APPENDIX B. CITATIONS AND AUTHORITIES

Federal Statutes, Acts, Executive Orders and other Authorities

Federal Statutes, Acts, Executive Orders and other Authorities		
Reference Number	**Title**	**Manual Section**
Title 5, United States Code (5 U.S.C.)	*Administrative Procedure Act (APA)*	Table 7
42 U.S.C	*Atomic Energy Act of 1954 (AEA)*	Chapter 3, 4, & 6, Tables 1, 2, 4, 6, & 7
Public Law (P.L.) 93-438	*Energy Reorganization Act of 1974*	Chapter 3, 4
P. L. 95-91	*DOE Organization Act*	Chapter 4 &7 Tables 1,2,3,& 7
42 U.S.C. (P.L. 91-190)	*National Environmental Policy Act (NEPA)*	Table 6 & 7
42 USC 7274d	*National Defense Authorization Act for fiscal years 1992 and 1993*	
P. L. 106-377	*National Nuclear Security Administration Act (NNSA) Act in the National Defense Authorization Act for 2000*	Chapter 4 &7 Tables 1, 2, 4, & 7
P. L. 104-113	*National Technology Transfer and Advancement Act of 1995*	Table 6, 7
P. L...97-425 as amended by Title V, Subtitle A of P. L. 100-203	*Nuclear Waste Policy Act of 1982 (NWPA)*	Table 1& 3
42 U.S.C. 2011 (P.L. 100-408)	*Price Anderson Amendments Act of 1988 (PAAA)*	Chapter 5 Table 7
P. L. 104-303	*Water Resources Development Act of 1996*	Table 7
Executive Order (E.O.) 12196	*Occupational Safety and Health Programs for Federal Employees*	Chapter 6 Table 1
E.O. 12564	*Drug-Free Federal Workplace*	Table 1
E.O. 12699	*Seismic Safety Of Federal and Federally Assisted or Regulated New Building Construction*	Table 6
E.O. 12941	*Seismic Safety of Existing Federally Owned or Leased Building*	Tables 6 & 7
E.O. 13101,	*Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*	Chapter 6 Tables 6 & 7
E.O. 13148	*Greening the Government Through Leadership in Environmental Management*	Tables 6, &7
Presidential Directive PD/NSC/25	*Scientific or Technological Experiments with Possible Large-Scale Adverse Environmental Affects and Launch of Nuclear systems into space*	Chapter 7
National Security Decision Directive 282	*Continuing Authority to Deliver Nuclear Materials and to Acquire Utilization Facilities*	Table 1
OMB Circular A-119	*Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*	Table 6 & 7
OMB Circular A-11	*Preparation, Submission and Execution of the Budget*	Table 7

Code of Federal Regulations		
Reference Number	**Title**	**Manual Section**
10 CFR Part 707	*Workplace Substance Abuse Programs at DOE Sites*	Table 6
10 CFR Part 708	*DOE Contractor Employee Protection Program*	Table 6
10 CFR Part 820	*Procedural Rules for DOE Nuclear Activities*	Tables 1, 3, 6, 7
10 CFR Part 830	*Nuclear Safety Management*	Table 6, 7

Code of Federal Regulations		
Reference Number	**Title**	**Manual Section**
10 CFR Part 835	*Occupational Radiation Protection*	Table 6, 7
10 CFR Part 850	*Chronic Beryllium Disease Prevention Program*	Table 6
10 CFR Part 1021	*National Environmental Policy Act Implementing Procedures*	Tables 6, 7
29 CFR Part 1910	*Occupational Safety and Health Standards*	Table 6, 7
29 CFR Part 1960	*Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters*	Chapter 6 Table 1
40 CFR Part 61	*National Emission Standards for Hazardous Air Pollutants*	Table 6
40 CFR Part 191	*Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes*	Table 1
48 CFR 923.570	*Workplace Substance Abuse Programs at DOE Sites*	
48 CFR 970.0309	*Whistleblower Protection Of Contractor Employees.*	Table 6
48 CFR 970.2305	*Workplace Substance Abuse Programs -- Management and Operating Contracts*	Table 6
48 CFR 970.5204-2	*Laws, Regulations, and DOE Directives*	Chapter 1 Table 6
48 CFR 5215-3	*Contracting by Negotiation*	Table 6
48 CFR 970.5223-1	*Integration of Environment, Safety and Health into Work Planning and Execution*	Chapter 1 Table 6
48 CFR 970.5223-3	*Agreement Regarding Workplace Substance Abuse Programs at DOE Facilities.*	Table 6
48 CFR 970.5223-4	*Workplace Substance Abuse Programs at DOE Sites.*	Table 6

DOE Policies			
Policy Number	**Titles**	**OPI**	**Manual Section**
DOE P 111.1	*Departmental Organization Management System*	OS	Chapter 8
DOE P 141.2	*Department of Energy Management of Cultural Resources*	EH	Table 6
DOE P 251.1	*Directives System Policy*	ME	Table 7
DOE P 410.1A	*Promulgating Nuclear Safety Requirements*	GC	Table 7
DOE P 411.1,	*Safety Management Functions, Responsibilities, and Authorities Policy*	EH	Chapter 1,5, & 8 Tables 6, 7, & 8
DOE P 450.4	*Safety Management System Policy*	EH	Chapter 1 Tables 4 & 6
DOE P 450.5	*Line Environment, Safety and Health Oversight*	NA	Table 6

DOE Orders, Manuals, Notices			
Directive Number	**Titles**	**OPI**	**Manual Section**
DOE O 100.1A	*Secretarial Succession*	OS	Chapter 1 Tables 1 & 2
DOE O 130.1	*Budget Formulation*	ME	Table 7
DOE O 135.1	*Budget Execution - Funds Distribution and Control*	ME	Table 7
DOE M 140.1-1B	*Interface With The Defense Nuclear Facilities Safety Board*	OS	Chapter 6 Tables 1, 2, 6, 7, 8
DOE O 225.1A	*Accident Investigations*	EH	Table 6, 7
DOE M 231.1-1	*Environment, Safety, and Health Reporting Manual*	EH	Table 6, 7
DOE M 231.1-2	*Occurrence Reporting and Processing of Operations*	EH	Table 6, 7

DOE Orders, Manuals, Notices			
Directive Number	**Titles**	**OPI**	**Manual Section**
	Information		
DOE N 231.1	*Environment, Safety, and Health Reporting Notice*	EH	Table 6, 7
DOE O 231.1A	*Environment, Safety, and Health Reporting*	EH	Table 6, 7
DOE HQ 250.1	*Civilian Radioactive Waste Management Facilities – Exemption from Departmental Directives*	RW	Chapter 2 Table 1
DOE M 251.1-1A,	*Directives System Manual*	ME	Chapter 3, Tables 1, 2, 7
DOE O 251,1A	*Directives System*	ME	Chapter 3 Table 7
DOE O 252.1	*Technical Standards Program*	EH	Table 6, 7
DOE O 350.1	*Contractor Human Resource Management Programs*	ME	Table 6
DOE O 360.1B	*Federal Employee Training*	ME	Table 6
DOE M 411.1-1C (this manual)	*Safety Management Functions, Responsibilities, and Authorities Manual*	EH	Tables 6, 7, & 8
DOE N 411.1	*Safety Software Quality Assurance Functions, Responsibilities, and Authorities for Nuclear Facilities and Activities*	EH	Table 6, 7
DOE O 414.1A	*Quality Assurance*	EH	Table 6, 7
DOE O 420.1A	*Facility Safety*	EH	Tables 1, 6, 7
DOE O 420.2A	*Safety of Accelerator Facilities*	SC	Table 7
DOE O 425.1C	*Startup and Restart of Nuclear Facilities*	EH	Tables 1, 6, 7
DOE M 426.1-1	*Federal Technical Capability Manual*	ME	Tables 2, 6, 8
DOE O 433.1	*Maintenance Management Program for DOE Nuclear Facilities*	EH	Table 6
DOE M 435.1-1	*Radioactive Waste Management Manual*	EM	Tables 1 & 6
DOE O 435.1	*Radioactive Waste Management*	EM	Table 6
DOE M 440.1-1	*DOE Explosives Safety Manual*	EH	Table 6
DOE O 440.1A	*Worker Protection Management for DOE Federal and Contractor Employees*	EH	Chapter 2 Tables 1, 6, & 7
DOE O 440.2B	*Aviation Management and Safety*	ME	Tables 1, 2, 6
DOE O 442.1A	*Department of Energy Employee Concerns Program*	EH	Table 6
DOE HQ O 442.	*Headquarters Occupational Safety and Health Program*	EH	Chapter 2 Tables 1 & 6
DOE O 450.1	*Environmental Protection Program*	EH	Tables 6 & 7
DOE N 450.7	*The Safe Handling, Transfer, and Receipt of Biological Etiologic Agents at Department of Energy Facilities*	EH	Table 6
DOE O 451.1B	*National Environmental Policy Act Compliance Program*	EH	Tables 2, 6, 7
DOE O 452.1B	*Nuclear Explosive and Weapons Surety Program*	NA	Tables 1 & 6
DOE O 452.2B	*Safety of Nuclear Explosives Operations*	NA	Table 6
DOE O 460.1B	*Packaging and Transportation Safety*	EM	Table 6, 7
DOE M 460.2-1	*Radioactive Material Transportation Practices*	EM	Table 6
DOE O 460.2	*Departmental Materials Transportation and Packaging Management*	EH	Table 6
DOE O 461.1	*Packaging and Transfer or Transportation of Materials of National Security Interest*	NA	Table 6
DOE O 470.2B	*Independent Oversight and Performance Assurance Program*	OA	Chapter 6 Tables 2, 6, 7, & 8

DOE Orders, Manuals, Notices			
Directive Number	**Titles**	**OPI**	**Manual Section**
DOE N 471.3	*Reporting Incidents of Security Concern*	SO	Table 6
DOE O 3790.1B	*Federal Employee Occupational Safety and Health Program*	ME	Table 6
DOE O 3792.3	*Drug-Free Federal Workplace Testing Implementation Program*	ME	Tables 1 & 6
DOE O 5400.5	*Radiation Protection of the Public and the Environment*	EH	Tables 1, 6, & 7
DOE O 5480.4	*Environmental Protection, Safety, and Health Protection Standards*	EH	Tables 1 & 6
DOE O 5480.19	*Conduct of Operations Requirements for DOE Facilities*	EH	Table 6 & 7
DOE O 5480.20A	*Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities*	EH	Table 6
DOE O 5480.30	*Nuclear Reactor Safety Design Criteria*	EH	Table 1
DOE O 5610.13	*Joint Department of Energy/Department of Defense Nuclear Weapon System Safety, Security, and Control Activities*	NA	Table 1
Secretarial Notice (SEN) 35-91	*Nuclear Safety Policy*	EH	Table 1

DOE ORGANIZATIONS TO WHICH DOE M 411.1-1C IS APPLICABLE FOR FEDERAL EMPLOYEE OCCUPATIONAL SAFETY AND HEALTH (FEOSH) REQUIREMENTS

Office of the Secretary

Chief Information Officer

Office of Civilian Radioactive Waste Management

Office of Congressional and Intergovernmental Affairs

Office of Counterintelligence

Departmental Representative to the Defense Nuclear Facilities Safety Board

Office of Economic Impact and Diversity

Office of Energy Efficiency and Renewable Energy

Energy Information Administration

Office of Environment, Safety and Health

Office of Environmental Management

Office of Fossil Energy

Office of General Counsel

Office of Hearings and Appeals

Office of Independent Oversight and Performance Assurance

Office of the Inspector General

Office of Intelligence

Office of Management, Budget and Evaluation and Chief Financial Officer

National Nuclear Security Administration

- Office of the Deputy Administrator for Defense Programs
- Office of the Deputy Administrator for Defense Nuclear Nonproliferation
- Office of Emergency Operations
- Office of the Associate Administrator for Facilities and Operations
- Office of the Associate Administrator for Management and Administration

Office of Nuclear Energy, Science and Technology

Office of Policy and International Affairs

Office of Public Affairs

Office of Science

Secretary of Energy Advisory Board

Office of Security

Office of Worker and Community Transition

Office of Energy Assurance

DOE ORGANIZATIONS TO WHICH DOE M 411.1-1C IS APPLICABLE FOR REQUIREMENTS OTHER THAN FEOSH

Office of the Secretary

Office of Civilian Radioactive Waste Management

Office of Energy Efficiency and Renewable Energy

Office of Environment, Safety and Health

Office of Environmental Management

Office of Fossil Energy

Office of Independent Oversight and Performance Assurance

National Nuclear Security Administration

- Office of the Deputy Administrator for Defense Programs
- Office of the Deputy Administrator for Defense Nuclear Nonproliferation

Office of Nuclear Energy, Science and Technology

Office of Science

Office of Security