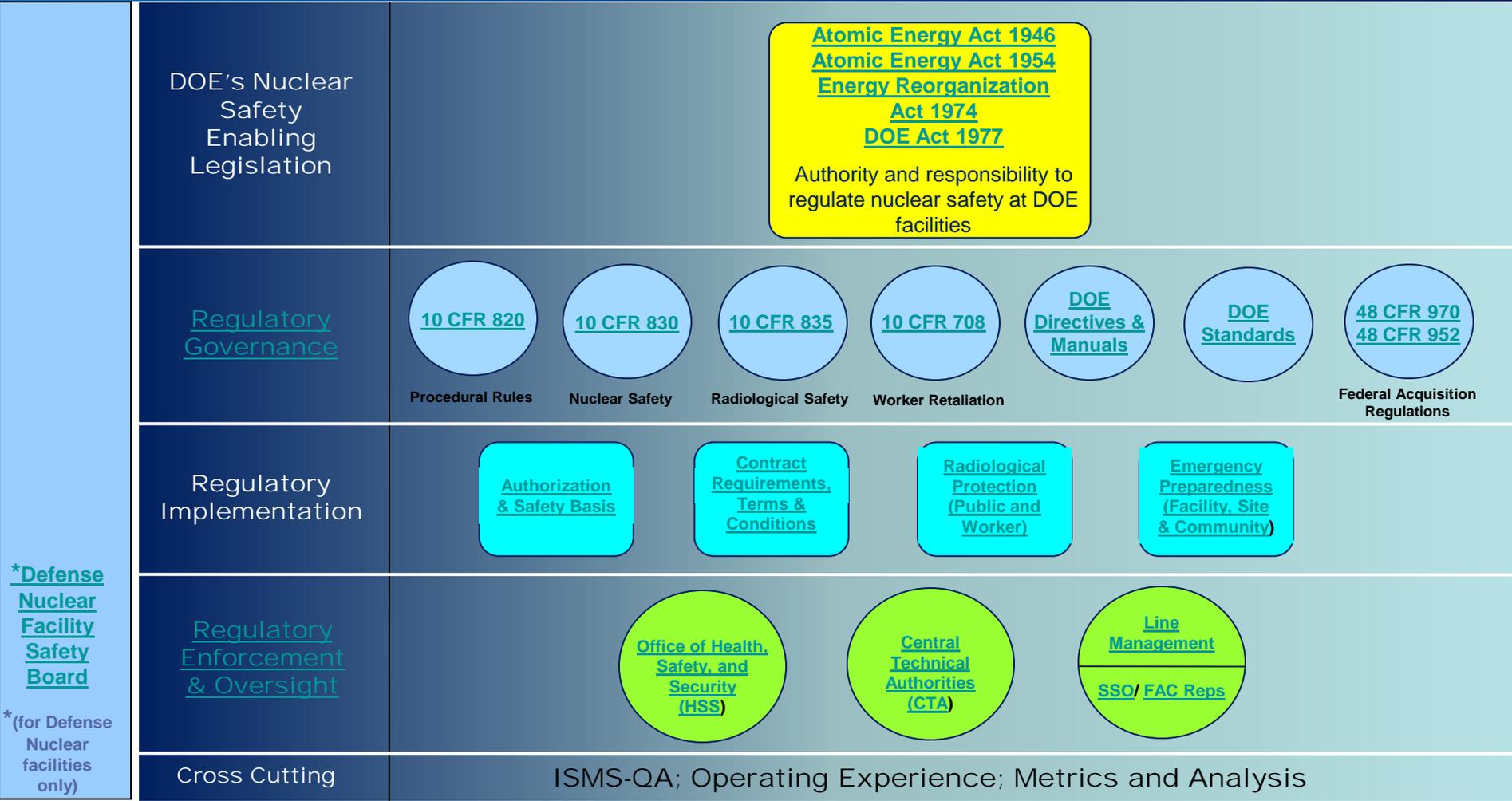


Department of Energy Nuclear Safety Regulatory Framework



External Oversight



Department of Energy Nuclear Safety Regulatory Framework



Purpose:

Atomic
Energy
Act of
1946

The Atomic Energy Act of 1946, also called the McMahon Act, determined how the United States federal government would control and manage the nuclear technology it had jointly developed with its wartime allies, Britain and Canada. It ruled that nuclear weapon development and nuclear power management would be under civilian, rather than military, control. It also established the United States Atomic Energy Commission for this purpose.

For Further Information visit:

- [Atomic Energy Act \(1946\)](#)

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Department of Energy Nuclear Safety Regulatory Framework



Purpose:

Atomic
Energy
Act of
1954

The purpose of this Act was to amend the 1946 Act to effectuate the policies set forth by providing:

- A program of conducting, assisting, and fostering research and development in order to encourage industrial progress.
- A program for the dissemination of unclassified scientific and technical information and for the control, dissemination, and declassification of Restricted Data.
- A program for Government control of the possession, use, and production of atomic energy and special nuclear material, whether owned by the Government or others, to make a contribution to the common defense and security and the national welfare, and to provide continued assurance of the Government's ability to enter into and enforce agreements with nations or groups of nations for the control of special nuclear materials and atomic weapons.

[Main Menu](#)

For Further Information visit:

- [Atomic Energy Act \(1954\)](#)

Department of Energy Nuclear Safety Regulatory Framework



Purpose:

Energy
Reorgan-
ization
Act of
1974

The Energy Reorganization Act of 1974 is a United States federal law that established the Nuclear Regulatory Commission (NRC). Under the Atomic Energy Act of 1954, the U.S. Atomic Energy Commission had the responsibility for development and production of nuclear weapons and for the development and safety regulation of the civilian uses of nuclear materials. The Act of 1974 split these functions, assigning to the Energy Research and Development Administration (now the DOE) the responsibility for the development and production of nuclear weapons, promotion of nuclear power, and other energy related work, and assigning to the NRC the regulatory work for civilian nuclear applications, which does not include regulation of defense nuclear facilities.

For Further Information visit:

- [Energy Reorganization Act \(1974\)](#)

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Department of Energy Nuclear Safety Regulatory Framework



Purpose:

DOE Act
of
1977

Through enactment of the Department of Energy Organization Act of 1977, the U.S. government placed all federal energy agencies and programs under the control of a single department, the Department of Energy (DOE). The only exception was the regulation of nuclear energy, which is done through the Nuclear Regulatory Commission. The DOE assumed the responsibilities of the Federal Energy Administration, the Energy Research and Development Administration, the Federal Power Commission, and parts of several other agencies including the nuclear weapons program.

For Further Information visit:

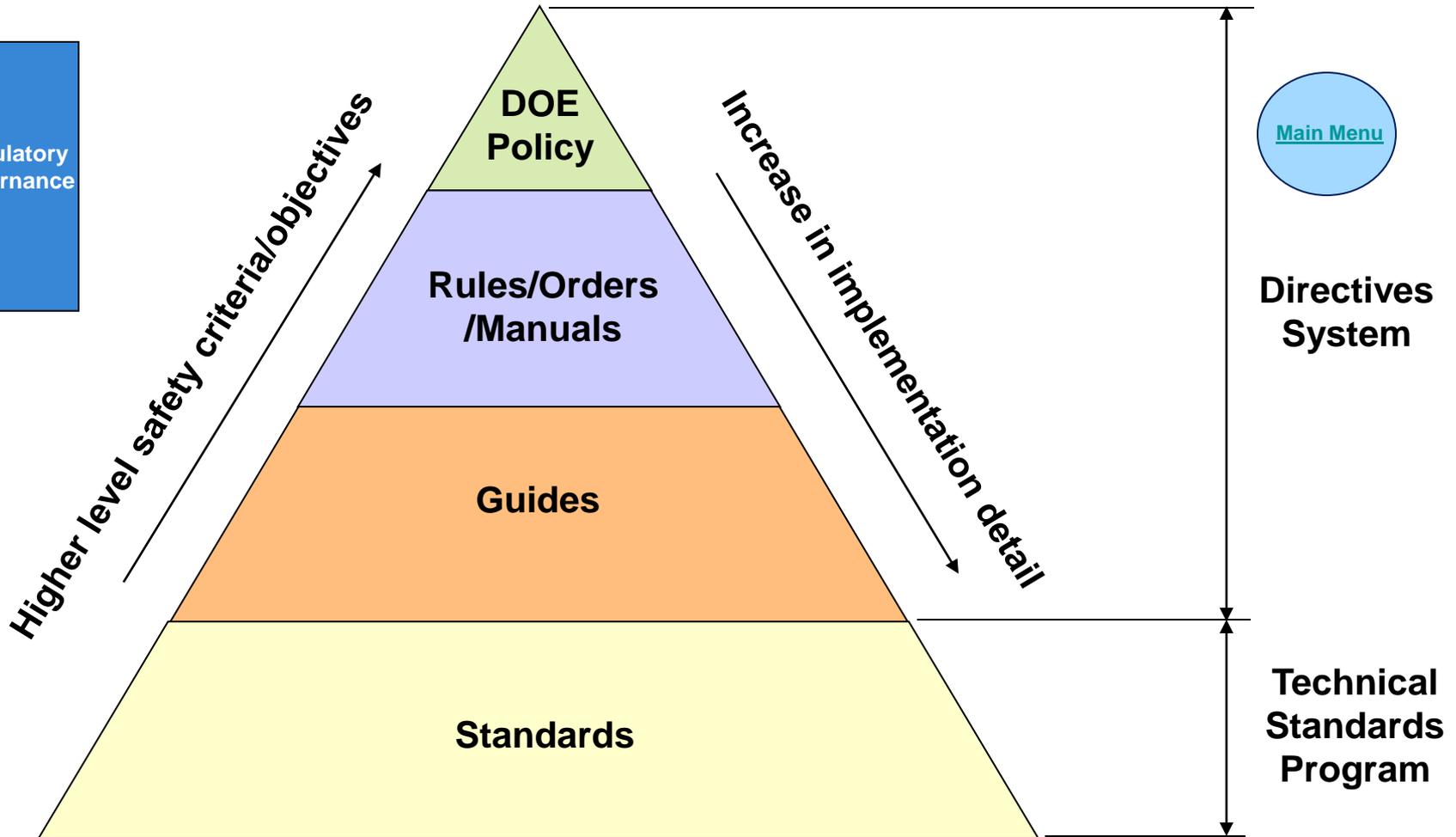
- [DOE Organization Act \(1977\)](#)

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Department of Energy Nuclear Safety Regulatory Framework



Regulatory
Governance



Department of Energy Nuclear Safety Regulatory Framework



10 CFR 820 Purpose:

10 CFR 820

This rule sets forth the procedures to implement the provisions of the Price-Anderson Amendments Act of 1988 (PAAA) which subjects DOE contractors that are protected by an indemnification agreement to potential civil and criminal penalties for violations of DOE nuclear safety regulations. In response to a Congressional mandate, DOE published its nuclear safety enforcement procedural rules and enforcement policy (10 CFR Part 820, Appendix A, *General Statement of Enforcement Policy*) in August 1993. The Office of Enforcement has the responsibility to carry out the statutory enforcement authority provided to DOE in the PAAA. DOE commenced enforcement of the nuclear safety rules in 1995. The Energy Policy Act of 2005 extends DOE contractor indemnification coverage until December 31, 2025, requires an inflationary adjustment of the maximum indemnification amount per incident (currently \$11.961 billion) every 5 years, and limits the total annual civil penalties that maybe assessed against any not-for-profit contractor.

[Main Menu](#)

For Further Information visit:

- [HSS Office of Enforcement](#)
- [10 CFR 820](#), *Procedural Rules for DOE Nuclear Facilities*

Department of Energy Nuclear Safety Regulatory Framework



10 CFR 830 Purpose:

10 CFR 830

This rule governs the conduct of contractors, DOE personnel, and other persons conducting activities (including providing items and services) that affect, or may affect, the safety of DOE nuclear facilities.

10 CFR 830 Consists of:

- Subpart A - Quality Assurance Requirements
- Subpart B - Safety Basis Requirements

For Further Information visit:

- [10 CFR 830](#), *Nuclear Safety Management*

[Main Menu](#)

Department of Energy Nuclear Safety Regulatory Framework



10 CFR 835

10 CFR 835 Purpose:

The rule establishes radiation protection standards, limits, and program requirements for protecting individuals from ionizing radiation resulting from the conduct of DOE activities.

10 CFR 835 Consists of:

- Subpart A – General Provisions
- Subpart B – Management and Administrative Requirements
- Subpart C – Standards for Internal and External Exposure
- Subpart D – [Reserved]
- Subpart E – Monitoring of Individuals and Areas
- Subpart F – Entry Control Program
- Subpart G – Posting and Labeling
- Subpart H – Records
- Subpart I – Reports to Individuals
- Subpart J – Radiation Safety Training
- Subpart K – Design and Control
- Subpart L – Radioactive Contamination Control
- Subpart M – Sealed Radioactive Source Control
- Subpart N – Emergency Exposure Situations

[Main Menu](#)

For Further Information visit:

- [10 CFR 835](#), *Occupational Radiation Protection*

Department of Energy Nuclear Safety Regulatory Framework



10 CFR 708 Purpose:

10 CFR 708

The DOE Contractor Employee Protection Program, established in Part 708, applies to complaints of reprisals or retaliation against DOE contractor employees for certain conditions (protected activities), including employee disclosures, participations, or refusals related to various matters involving nuclear safety and/or worker safety and health issues. Specifically, Part 708 provides employees with a process to file a complaint concerning retaliation and to obtain restitution from the contractor in the event of a finding of reprisal under the Rule.

If an act of retaliation by a DOE contractor results from an employee's involvement in matters of nuclear safety in connection with a DOE nuclear activity, the retaliation could constitute a violation of a DOE nuclear safety requirement and could warrant relief to the employee under Part 708, and the imposition of civil penalties on the DOE contractor under Part 820.

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For Further Information visit:

- [10 CFR 708](#), *DOE Contractor Employee Protection Program*

Department of Energy Nuclear Safety Regulatory Framework



Purpose:

DOE
Directives &
Manuals

The DOE Directives System is the means by which DOE policies, requirements, and responsibilities are developed and communicated throughout the Department. Directives include Policies, Orders, Notices, Manuals, and Guides. DOE Order 251.1C, *Departmental Directives Program (Jan. 15, 2009)*, sets forth requirements for the development, coordination, review, and approval of Directives .

A subset of DOE Directives contain DOE's nuclear safety requirements and implementation guidance. A list of these can be found at:

[Main Menu](#)

For Further Information visit:

- [DOE Directives System](#)

Department of Energy Nuclear Safety Regulatory Framework



DOE
Standards

Purpose:

The Technical Standards Program (TSP) promotes the use of voluntary consensus standards by the DOE, provides DOE with the means to develop needed technical standards, and manages overall technical standards information, activities, issues, and interactions. DOE Order 252.1A, *Technical Standards Program* (Feb. 23, 2011), provides the means for DOE to cover performance-based or design-specific technical specifications and related management systems practices, and span classification of components; delineation of procedures; specification of materials, products, performance, design, and operations.

The technical standards that apply to nuclear safety fall under the following categories: Safety (SAFT), Natural Phenomena Hazards (NPH), Management (MGMT), Fire Protection (FIRP), Configuration Management (CMAN), Training and Qualification (TRNG), Operations (OPER), Packaging and Transportation (PACK), and Engineering Design, Construction, Other (EDCO).

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For Further Information visit:

- [Technical Standards Webpage](#)

For a list of standards visit:

- [HSS Office of Nuclear Safety/Standards](#)

Department of Energy Nuclear Safety Regulatory Framework



48 CFR 970 Purpose:

48 CFR 970
48 CFR 952

This subpart prescribes some of the solicitation provisions and contract clauses for use in management and operating contracts. The provisions and clauses contained in this subpart supplement the provisions and clauses prescribed in the Federal Acquisition Regulation (FAR) and in other parts of the Department of Energy Acquisition Regulation (DEAR) (48 CFR 901 through 48 CFR 952). Management and operating contracts are hybrid contracts, in some cases including aspects of several FAR contract types, for example, supplies and construction. For some FAR solicitation provisions and contract clauses, this subpart prescribes their use despite the hybrid nature of the work required.

For Further Information visit:

- [DEAR Webpage](#)

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Department of Energy Nuclear Safety Regulatory Framework



48 CFR 952 Purpose:

48 CFR 970
48 CFR 952

This part implements Federal Acquisition Regulation (FAR) part 52 which sets forth contract clauses for use in connection with the acquisition of personal property and nonpersonal services (including construction), and supplements, as well as modifies, FAR part 52 by prescribing certain modifications to be made to FAR clauses when used in DOE contracts and specifying certain DOE contract clauses to be used in addition to or in place of such FAR clauses.

For Further Information visit:

- [DEAR Webpage](#)

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Department of Energy Nuclear Safety Regulatory Framework



Authorization and Safety Basis: Overview

Authorization
& Safety Basis

10 CFR 830, Subpart B, *Safety Basis Requirements*, contains the requirements for the development and approval of the facility safety basis that provides the basis for authorization of the operation of a DOE Hazard Category 1, 2, and 3 nuclear facility.

These requirements include performing a hazard and accident analysis and establishing safety controls to prevent and mitigate the release of hazardous material. DOE has developed several Directives and Standards amplifying and supporting implementation of 10 CFR 830.

Before authorizing start up the facility, the contractor and DOE must perform a Readiness Review of the facility to ensure the safety basis has been appropriately implemented

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[Safety Basis Review and Approval](#)

[Readiness Review](#)

Department of Energy Nuclear Safety Regulatory Framework



Safety Basis Review and Approval

Authorization
& Safety Basis

In the DOE governance model, contractors responsible for the facility develop the safety basis and DOE line management review and approve the safety basis.

Development of the safety basis is a multistep process that begins early in the facility design process and is governed by DOE Standard 1189-2008, *Integrating Safety into the Design Process*.

Contractor line management will develop several safety design basis documents as the facility design matures leading up to the Document Safety Analysis (DSA), which reflects the final facility design; and Technical Safety Requirements (TSRs), which describe operational limitations for the facility. DOE will review and approve both of the documents utilizing guidance and criteria from DOE Standard 1104-2009, *Safety Basis Review*.

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[Readiness Review](#)

Department of Energy Nuclear Safety Regulatory Framework



Readiness Reviews

Authorization
& Safety Basis

Prior to authorizing operation of a Hazard Category 1, 2, and 3 nuclear facility, contractors responsible for the facility and DOE must perform a detailed review of the implementation of the safety basis and associated safety management programs (i.e., radiation protection control).

Different levels of reviews can be performed depending upon the type of facility operation being approved (i.e., startup of a new facility, start up following major modification of a facility or following prolonged shutdown).

The most comprehensive reviews are called Operation Readiness Reviews which are performed by contractor and DOE review teams.

For Further Information visit:

- [HSS Office of Nuclear Safety Policy](#)

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Department of Energy Nuclear Safety Regulatory Framework



Contract
Requirements,
Terms, &
Conditions

Contract Requirements, Terms, and Conditions

DOE contracting requirements are contained in the Federal Acquisition Regulation and Department of Energy Acquisition Regulation.

DOE establishes management and operating contracts for each of its sites which establish expectations for safely accomplishing work at the site. The contractor awarded the contract is held accountable for meeting all of the requirements, terms, and conditions in the contract. These include:

- All applicable Federal, State, and local laws and regulations. (These requirements can be included in *List A* in contracts).
- All applicable DOE Directives (Identified in *List B* in contracts)

In accordance with DOE Order 410.1, the DOE Central Technical Authority responsible for the site, must concur on the list of DOE Directives included in all new prime management and operating, management and integration, design, and construction contracts for DOE nuclear facilities.

For Further Information visit:

- [Office of Nuclear Safety Policy](#)

[Main Menu](#)

Department of Energy Nuclear Safety Regulatory Framework



Radiological Protection

Radiological
Protection
(Public and
Worker)

The Department of Energy conducts its radiological operations in a manner that ensures the health and safety of workers, the public and the environment. To achieve this, the department ensures that radiation exposures to its workers and the public and releases to the environment are maintained below regulatory limits and deliberate efforts are taken to further reduce exposures and releases to as low as reasonably achievable (ALARA). The Department has established and maintains a system of regulatory policy, standards and guidance, which ensures accurate monitoring, measurement and analysis of exposures, control of dose and contamination by including ALARA principles, and conducts oversight to ensure radiological requirements and practices are implemented.

For Further Information visit:

- [Radiological Protection Policy and Regulations](#)

[Main Menu](#)

Department of Energy Nuclear Safety Regulatory Framework



Emergency Preparedness

Emergency
Preparedness
(Facility, Site
and Community)

DOE has established an Emergency Management System, as specified in DOE Order 151.1C, *Comprehensive Emergency Management System*, which provides the framework for development, coordination, control, and direction of all emergency planning, preparedness, readiness assurance, response, and recovery actions to ensure that, in the event of an emergency, appropriate response measures are taken to notify and protect workers, the public, and the environment. This includes an Operational Emergency Base Program and additional detailed emergency planning requirements for facilities with hazardous materials.

In addition, DOE, through NNSA's Office of Associate Administrator for Emergency Operations, maintains resources to support emergency preparedness and response throughout DOE and the United States.

For Further Information visit:

- [NNSA Office of Emergency Operations](#)

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Department of Energy Nuclear Safety Regulatory Framework



Purpose:

Defense
Nuclear
Facility
Safety
Board
(DNFSB)

The Defense Nuclear Facilities Safety Board is an independent federal agency established by Congress in 1988. The Board's mandate under the Atomic Energy Act is to provide safety oversight of the nuclear weapons complex operated by the Department of Energy (DOE). The nuclear weapons program remains a complex and hazardous operation. The DOE must maintain readiness of the nuclear arsenal, dismantle surplus weapons, dispose of excess radioactive materials, clean up surplus facilities, and construct new facilities for many purposes. The constant vigilance of the Board is required to ensure that all of these activities are carried out by DOE in a manner that provides adequate protection for the public, workers, and the environment.

For Further Information visit:

- [DNFSB](#)
- [DNFSB Departmental Representative](#)

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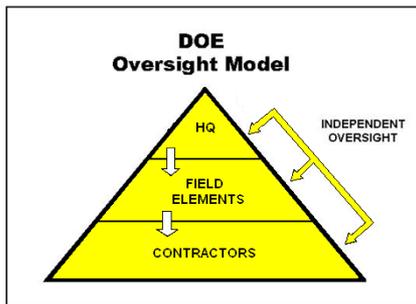
Department of Energy Nuclear Safety Regulatory Framework



Regulatory Enforcement & Oversight

Purpose:

In 1988, the Price-Anderson Amendments Act (PAAA) was signed into law. The PAAA subjects DOE-indemnified contractors, subcontractors, and suppliers to potential civil penalties for violations of DOE rules, regulations, and compliance orders relating to nuclear safety requirements. As part of its agreement to continue the indemnification coverage, Congress mandated that DOE enforce nuclear safety requirements to minimize the risk to workers and the public. On August 17, 1993, DOE published its nuclear safety enforcement procedural rules and enforcement policy (10 C.F.R. Part 820, appendix A, *General Statement of Enforcement Policy*).



DOE Policy 226.1B, *Department of Energy Oversight Policy* (April 25, 2011), establishes assurance systems and oversight programs that include four essential elements: A comprehensive and rigorous assurance system implemented at all sites; field element line management oversight processes that evaluate programs and management systems and the validity of the site assurance system; headquarters line management oversight processes that are focused primarily on the DOE field elements but include evaluation of contractors as necessary to determine the effectiveness of field element oversight; and independent oversight processes that are performed by DOE organizations that do not have line management responsibility for the management of the activity and thus provide an independent perspective on the effectiveness of programs and activities at all organizational levels.

The four elements are designed to work as a comprehensive system to provide assurance that DOE activities are safe and secure. Oversight of high consequence activities, such as high hazard nuclear operations, requires additional rigor, such as instituting Central Technical Authorities for core nuclear safety functions.

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For Further Information visit:

- [Office of Enforcement and Oversight Federal Regulations](#)
- [Office of Enforcement and Oversight Directives](#)

Department of Energy Nuclear Safety Regulatory Framework



Purpose:

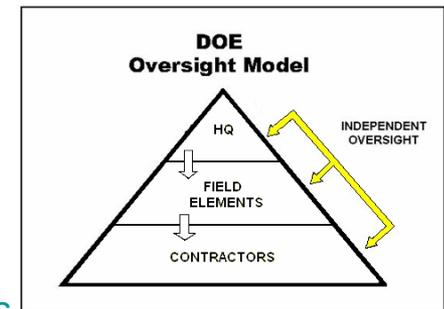
Office of
Health, Safety,
and Security
(HSS)

The **Office of Price-Anderson Enforcement** implements and enforces congressionally mandated nuclear safety requirements of 10 CFR Parts 708, 830 and 835 in accordance with 10 CFR 820. This Office works closely with DOE program and field elements, in coordination with the Offices of Nuclear Safety and Environment, Corporate Safety Analysis, and Independent Oversight, to implement the DOE nuclear safety enforcement program.

The **Office of Independent Oversight** provides DOE line management, Congress, and other stakeholders with an independent evaluation of the effectiveness of DOE policy and line management performance in nuclear safety and other critical areas as directed by the Secretary.

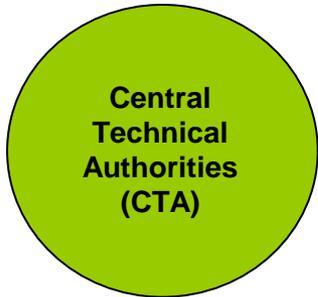
For Further Information Visit:

- [HSS Enforcement and Oversight](#)
- [Enforcement Process Overview](#)
- [ESH Evaluations Guidance Documents](#)
- [Office of Independent Oversight Appraisal Process Protocols](#)
- [DOE Order 227.1](#) Independent Oversight Program (Aug. 30. 2011)
- [10 CFR 820](#) Procedural Rules for DOE Nuclear Activities



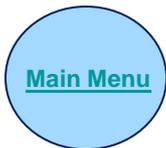
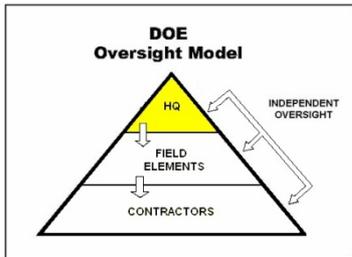
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Department of Energy Nuclear Safety Regulatory Framework



PURPOSE:

In 2004, the Secretary of Energy committed to create the CTA following lessons learned from the Columbia and Davis-Besse incidents. The Defense Board commitment (2004-1) included specific responsibilities for the Administrator, NNSA, the Under Secretary of Energy, and the Under Secretary for Science to establish a Central Technical Authority that will maintain operational awareness with respect to complex, high hazard nuclear operations, for ensuring that the Departments safety policies are adequate and properly implemented. The CTA will maintain awareness of nuclear safety requirements and guidance that are consistent with principles of Integrated Safety Management across their organizations including reviews of documented safety analyses, authorization agreements and readiness reviews. Periodic review and assessments of the number and adequacy of technically capable personnel necessary to fulfill nuclear safety responsibilities and authorities is also required. The Chief of Defense Nuclear Safety and Chief of Nuclear Safety assist the CTAs in carrying out these responsibilities.



For Further Information Visit:

- [DOE P 226.1B](#) Department of Energy Oversight Policy (April 25, 2011)
- [DOE O 226.1B](#) Implementation of DOE Oversight Policy (April 25, 2011)
- [DOE O 410.1](#) Central Technical Authority Responsibilities Regarding Nuclear Safety Requirements

Department of Energy Nuclear Safety Regulatory Framework



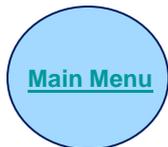
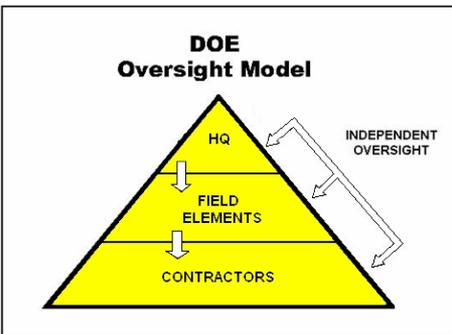
Line Management:

Line Management responsibility extends from the contractor to the responsible site organization (i.e., site or field office), to the responsible program office or Under Secretary, and ultimately to the Deputy Secretary and Secretary of Energy. The NNSA Administrator, the Under Secretary of Energy, and the Under Secretary for Science will maintain operational awareness of nuclear operations. The system of line responsibility balanced with independent oversight allows for a safe and productive work environment.

A prime objective is to ensure that contractor assurance systems and DOE oversight programs are comprehensive and integrated for key aspects of nuclear operations essential to mission success.

For Further Information visit:

- [DOE O 226.1B](#) Implementation of Department of Energy Oversight Policy
- [DOE O 227.1](#) Independent Oversight Program (Aug. 30, 2011)
- [DOE G 450.4-1C](#) Safety Management Functions, Responsibilities, and Authorities Manual (Sept. 29, 2011)

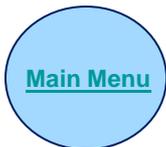
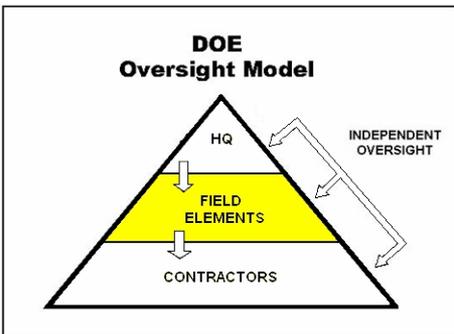


Department of Energy Nuclear Safety Regulatory Framework



Safety System Oversight (SSO):

In May 2004, the Department of Energy (DOE) institutionalized the Safety System Oversight (SSO) function to monitor the performance of systems relied upon to assure safe operation of nuclear facilities and evaluate effectiveness of the Contractor's cognizant system engineer program. SSO personnel are a key technical resource qualified to oversee contractor management of safety systems at DOE defense nuclear facilities. SSO personnel work for the DOE field elements and are highly qualified staff members who perform assessments and investigations to confirm performance of assigned safety systems in meeting established safety and mission requirements and review sections of the facility documented safety analysis (DSA) related to these systems. DOE line management is responsible for safety at DOE facilities and for meeting mission objectives and goals. ISM System processes help to ensure nuclear safety systems are able to perform their design safety functions. Effective implementation of ISM relies upon the ability to apply engineering expertise to maintain safety system configuration and assess system condition and effectiveness of safety management program implementation.



For Further Information visit:

- [Federal Technical Capability Panel](#)

Department of Energy Nuclear Safety Regulatory Framework



Facility Representative:

The purpose of the DOE Facility Representative Program is to ensure that competent DOE staff personnel are assigned to oversee the day-to-day contractor operations at DOE's hazardous nuclear and non-nuclear facilities. Oversight performed by Facility Representatives provides DOE line managers with accurate objective information on the effectiveness of contractor work performance and practices, including implementation of the integrated safety management and nuclear safety systems. The Facility Representative is responsible for identifying and evaluating nuclear and other safety issues and concerns, diagnosing root causes, ensuring the adequacy of communications between the facility contractor and DOE management, and recommending compensatory measures to DOE site management.

For Further Information visit:

- [Facility Representative Program](#)
- [DOE-STD-1063-2011](#) Facility Representatives
- [DOE O 426.1-1](#) Federal Technical Capability

