

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

Secretary of Energy  
NOTICE  
SEN-35-91  
DATE: 9-9-91

SUBJECT: NUCLEAR SAFETY POLICY

It is the policy of the Department of Energy (DOE) that the general public be protected such that no individual bears significant additional risk to health and safety from the operation of a DOE nuclear facility above the risks to which members of the general population are normally exposed. The purpose of this document is to establish the basic nuclear safety policy from which specific safety rules, orders, standards, and other requirements shall follow.\* DOE facilities will be designed, constructed, operated, and decommissioned to assure the protection of the public, workers, and the environment.

To implement this policy, DOE and its contractors shall: 1) establish and maintain management involvement and accountability to ensure that nuclear safety requirements are met and individual responsibility is articulated and understood by all parties; 2) develop and foster technically competent personnel and the technical standards necessary to achieve nuclear safety; 3) use established nuclear safety goals to serve as aiming points for performance; 4) establish and maintain vigorous oversight to assure adherence to this policy and its implementing directives; and 5) promote a culture that is dedicated to continuously striving to enhance nuclear safety.

#### 1. MANAGEMENT

The Secretary of Energy has overall responsibility for the safety of DOE facilities. DOE line managers report to the Secretary and are directly responsible and accountable for the safety of their activities. Clear lines of authority and responsibility for ensuring safety will be established and maintained at all levels of DOE and contractor organizations. Clear and adequate guidance shall be provided by DOE line managers to their contractors including the need for management to maintain a proper balance of safety, production goals, and cost considerations which ensures that safety is fully integrated into every level of activity. DOE line management is responsible for defining appropriate safety objectives for its facilities, and contractor management is responsible for meeting those objectives, instilling a philosophy of personal excellence, and timely identification and resolution of safety problems. DOE and contractor management are responsible for continuously pursuing enhancements to safety--not just complying with a minimal set of requirements.

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\* Weapons safety and nuclear safety of facilities and activities under Executive Order 12344 (42 USC 7158, note) are assured through directives separate from this document.

To ensure full responsibility for nuclear safety, DOE will require that all contractors' activities be conducted in accordance with all DOE rules, regulations, and Orders relating to nuclear safety. Contractor responsibility for the safety of its activities does not in any way relieve, diminish, or abrogate DOE managers of the responsibility for

assuring safety through proper decision-making, planning, direction, and oversight. Safe operations, environmental protection, and meeting production and research goals are mutually achievable objectives. Assurance of adequate safety will not be compromised to achieve production or research objectives.

## 2. TECHNICAL COMPETENCE

The scientific, engineering, and technical knowledge and ability of DOE and its contractor personnel directly determine the Department's ability to achieve its safety policy. Potential hazards associated with nuclear operations dictate that DOE and contractor personnel possess technical competence, commitment, discipline, and high standards of professional and personal excellence. Organizations responsible for DOE nuclear activities shall have the ability to recruit, train, and qualify personnel who possess these attributes for job specific positions.

Adherence to appropriate national and international standards in the design, construction, operation, and decommissioning of DOE's nuclear facilities and activities is necessary for the successful implementation of the Department's nuclear safety policy. Standards proven through years of experience and accepted by professional and technical societies shall be used wherever applicable. Yet no matter how carefully conceived and properly developed, technical standards cannot address all eventualities.

Therefore, DOE contractors must critically assess the standards in use at DOE facilities to assure that they remain consistent with the latest information arising from operational experience and developments in science and engineering. Where standards do not exist or where existing standards do not suffice, appropriate DOE nuclear safety standards shall be developed and adopted.

## 3. SAFETY GOALS

DOE has adopted two quantitative safety goals to limit the risks of fatalities associated with its nuclear operations. These goals are the same as those established for nuclear powerplants by the Nuclear Regulatory Commission (NRC) and, like the NRC goals, should be viewed as aiming points for performance. The goals are:

The risk to an average individual in the vicinity of a DOE nuclear facility for prompt fatalities that might result from accidents should not exceed one-tenth of one percent (0.1%) of the sum of prompt fatalities resulting from other accidents to which members of the population are generally exposed. For evaluation purposes, individuals are assumed to be located within one mile of the site boundary.

The risk to the population in the area of a DOE nuclear facility for cancer fatalities that might result from operations should not exceed one-tenth of one percent (0.1%) of the sum of all cancer fatality risks resulting from all other causes. For evaluation purposes, individuals are assumed to be located within 10 miles of the site boundary.

In striving to reach these goals, DOE nuclear facilities and activities

shall be designed, constructed, operated, and decommissioned with: a) appropriate barriers to prevent or minimize potential radioactive releases; b) engineered safety features to minimize potential releases; and c) procedural controls to mitigate the effects of potential releases. These goals shall be addressed for both new and existing facilities. Proposed modifications to existing facilities to achieve these goals shall be prioritized along with other proposed modifications based on their safety significance. DOE shall pursue the evolution of additional potential safety goals for plant and co-located workers to support enhanced safe operations of its facilities.

DOE recognizes there are large uncertainties in the data and available methods for assessing risk levels especially with respect to potential health effects from nuclear facility operations. Therefore, reasonable analyses based on available data using standardized approaches may be employed while more rigorous approaches and better data are developed.

DOE safety goals are aiming points and are not substitutes for compliance with DOE directives and nuclear safety-related rules.

The adoption of safety goals should not be construed as a requirement to conduct probabilistic risk assessments.

#### 4. OVERSIGHT AND SELF-ASSESSMENT

DOE line management has the primary responsibility for monitoring, assessing, and assuring the adequacy of contractor activities. The Department shall also establish and maintain a capability, independent of the line organization, to monitor and oversee all aspects of its performance, including nuclear safety. Independent oversight, separate from line management, serves as an independent source of information for senior management. This system of checks and balances is intended to promote early identification and resolution of problems encountered by line management. Independent oversight is not a substitute for line management's responsibility to conduct self-assessments of its activities to help ensure the safety of DOE nuclear facilities.

#### 5. SAFETY CULTURE

Achieving continuous improvement in nuclear safety requires a culture that encourages setting and maintaining high standards; identifying and resolving problems and deficiencies; openness to criticism and recommendations for improvement; and mutual respect and effective communication between line managers and independent oversight.

This culture can only be established if management is fully committed to its nuclear safety responsibilities. It is DOE policy to establish and maintain such a culture.

The Department intends to implement this policy to foster an ethic of continuous improvement of nuclear safety at DOE facilities. This ethic will be characterized by a more disciplined approach to management and operations, sounder technical bases for decisions and actions, greater technical inquisitiveness, and more rigorous self-assessment. A safety culture based on this openness to criticism is necessary to assure that the Department adequately protects the health and safety of the public, DOE and contractor employees, and the environment.

The Department will issue a set of Orders, rules, and safety guides to establish nuclear safety requirements. which will implement this policy. The objective is to achieve a coherent and cohesive set of nuclear safety requirements. The Assistant Secretary for Nuclear Energy is directed to assure that this result is achieved and to establish an independent review process to verify such a result.

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