



The Deputy Secretary of Energy
Washington, DC 20585

September 18, 2000

MEMORANDUM FOR HEADS OF DEPARTMENTAL ELEMENTS

FROM:

T. J. GLAUTHIER

A handwritten signature in black ink, appearing to read "T. J. Glauthier", written over the printed name.

SUBJECT:

CONTINUATION OF NUCLEAR CRITICALITY
SAFETY INITIATIVES

During the past year the Department has taken a number of steps to strengthen nuclear criticality safety as part of our Integrated Safety Management System. My November 3, 1999 memorandum on criticality safety described specific actions to improve the Department's ongoing criticality safety practices. Many of the near term actions outlined in that memo have been completed. This memorandum details the next series of actions to further enhance the effectiveness of the Department's nuclear criticality safety programs.

The Department's Office of Oversight recently completed a review of key nuclear facilities involved in fissile material operations. The results of this review are summarized in the March 2000 report, "Nuclear Criticality Safety at Key Department of Energy Facilities." While the report concludes that there are no imminent criticality safety hazards at the facilities reviewed, it highlights additional steps the Department can take to improve nuclear safety programs and the professional expertise of those responsible for implementing nuclear safety. In response to the report, on May 11, 2000, Secretary Richardson outlined specific actions to be taken. Attachment 1 lists these actions and the remaining long term actions from my November 3, 1999 memorandum on criticality safety.

Lead Program Secretarial Officers should direct appropriate Field Office Managers to implement actions listed in Attachment 1. Field Office Managers should designate a point of contact to work with the Headquarters Points of Contact listed in Attachment 2. These Headquarters and Field Office individuals will be responsible for tracking associated actions, ensuring Secretarial Officers are cognizant of status, and coordinating activities across sites. The Secretarial Officers will report quarterly to me on progress towards completing these actions. The Department's Nuclear Criticality Safety Program Management Team is available to advise responsible managers and to assist in the completion of actions where appropriate. Members of this team are listed in Attachment 2.

The Deputy Administrator for Naval Reactors shall ensure that actions taken to improve nuclear criticality safety in the Naval Nuclear Propulsion Program continue separate from this memorandum.

Attachments

Nuclear Criticality Safety Improvement Actions

1. Develop Corrective Action Plans and Improvement Plans for Criticality Safety Programs

- a. **Sites Develop Formal Corrective Action Plans to Address Issues from Criticality Safety Self-Assessments** - Sites complete efforts to develop corrective action plans for all safety issues identified in their self-assessments of criticality safety, as directed by the November 3, 1999 memorandum on criticality safety improvements. All safety issues resulting from these self-assessments should be entered into the Department's Corrective Action Tracking System (CATS). Information regarding CATS and access to the system is at <http://tis.eh.doe.gov/portal/ism/cats.htm>.

Responsible Managers: Field Office Managers

Due Date: September 30, 2000

- b. **Sites Develop Improvement Plans** - Improvement plans should address the three DOE Site Opportunities for Improvement described in the report, "Nuclear Criticality Safety at Key Department of Energy Facilities." The Opportunities for Improvement are summarized here:

- Ensuring that criticality controls and their technical bases are understood
- Ensuring rigorous adherence to procedures and controls
- Improving feedback and improvement processes

Copies of the full report can be obtained at <http://tis.eh.doe.gov/criticality/>. The Opportunities for Improvement should be considered by sites to enhance their nuclear criticality safety programs beyond the correcting of deficiencies identified in their self-assessments. Specific measures that can be taken to address some of the Opportunities for Improvement will be developed at a workshop, which is described in Action #7 below.

Responsible Managers: Field Office Managers

Due Date: December 31, 2000

The formal corrective action plans and the improvement plans may be combined into a single plan, if appropriate.

- ### 2. Perform Follow-up Assessments
- The Office of Oversight in Environment, Safety and Health will perform follow up assessments at the five key facilities that were the subject of the report, "Nuclear Criticality Safety at Key Department of Energy Facilities." These follow-up assessments will evaluate the effectiveness of implemented corrective actions.

Responsible Manager: Deputy Assistant Secretary for Oversight (EH-2)

Due Date: September 30, 2001

- 3. Develop Performance Metrics** - Within the scope of Integrated Safety Management System activities, appropriate sites complete efforts to develop performance metrics that are specific to nuclear criticality safety, where they do not already exist. The performance metrics could be incorporated into contract modifications. Headquarters Points of Contacts listed in Attachment 2 should share performance metrics across sites. This is a remaining action described in the November 3, 1999 memorandum on criticality safety improvements.

Responsible Managers: Field Office Managers

Due Date: October 31, 2000

- 4. Ensure Continued Nuclear Criticality Safety Expertise**

- a. Update to Annual Technical Workforce Analysis** - The Federal Technical Capabilities Panel will update their annual workforce analysis with the goal of determining where current shortages of nuclear criticality safety expertise exist and where expected shortages may occur within the next three years. The Federal Technical Capabilities Panel should also identify opportunities for Field Offices to correct existing shortages, such as using excepted service hiring practices, and to avoid potential future shortages, such as offering retention allowances and cash awards to experienced, high performing employees in this specialized area.

Responsible Managers: Federal Technical Capabilities Panel

Due Date: December 31, 2000

- b. Increasing Criticality Safety Staff** - Field Offices correct shortages of Federal criticality safety staff where they exist. Field Office Managers may use the annual workforce analysis performed by the Federal Technical Capability Panel as input to their decision on how best to address any shortages.

Responsible Managers: Field Office Managers

Due Date: June 30, 2001

- 5. Improve Criticality Safety Qualifications**

- a. Federal Criticality Safety Qualifications** - DOE criticality safety engineers complete the Department's qualification standard for criticality safety experts. This is a continuing initiative undertaken as part of the Department's Implementation Plan for Defense Nuclear Facilities Safety Board (Board) Recommendation 97-2. The qualification standard is available at the web site <http://cted.inel.gov/cted/qualstd.html>.

Responsible Managers: Field Offices Managers

Due Date: December 31, 2000

- b. Contractor Criticality Safety Qualifications** - Field Offices ensure contractors have DOE-approved plans for qualifying contractor criticality safety staff according to the Department's qualification standards for criticality safety experts. This is a continuing initiative undertaken as part of the Department's Implementation Plan for Board Recommendation 97-2. The requirements for these plans are described in page change 3 to DOE O 420.1, *Facility Safety*, which is in the final stages of development within the Department's directives process.

Responsible Managers: Field Office Managers

Due Date: April 30, 2001

6. Update Requirements and Guidance for Criticality Safety

- a. Finalize Page Change to DOE O 420.1, *Facility Safety*** - The Office of Environment, Safety and Health finalize the page change that describes requirements to implement a training and qualification program for nuclear criticality safety engineers.

Responsible Manager: Assistant Secretary for Environment, Safety and Health

Due Date: September 30, 2000

- b. Revise and Update DOE Directives and Standards** - The Office of Environment, Safety and Health, with advice and assistance from the Department's Criticality Safety Support Group, will expedite completion of ongoing efforts to revise and update DOE directives and standards applicable to criticality safety. Updates should continue to be made to strengthen DOE orders and standards regarding certain aspects of criticality safety programs and practices. Specific needed improvements are described in the Headquarters Opportunities for Improvement in the report, "Nuclear Criticality Safety at Key Department of Energy Facilities."

Responsible Manager: Assistant Secretary for Environment, Safety and Health

Due Date: March 31, 2001

- 7. Increase Involvement by Criticality Safety Experts in Operations** - Effective criticality safety practices should be an essential part of Integrated Safety Management Systems at all sites where fissile material operations are involved. Several sites have established criticality safety programs which promote efficient integration of criticality safety into operations. To share these experiences, safety professionals from these sites will hold a Department-wide workshop to discuss: (a) best practices regarding interactions between nuclear criticality safety staff and operators, (b) involvement of operations personnel in the criticality safety program, (c) how to effectively increase the number of hours criticality safety engineers are on the floor where the work is done, and

(d) other lessons-learned which promote efficient integration of criticality safety into operations.

Deliverables from this workshop will be (a) the identification of barriers at Department sites to implementing the best practices in the above four areas and (b) recommendations for corrective actions. The Department's Nuclear Criticality Safety Program Management Team will coordinate this workshop.

Responsible Managers: Nuclear Criticality Safety Program Management Team

Due Date: November 30, 2000

Headquarters Points of Contact

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Nuclear Criticality Safety Program Management Team

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