



## Department of Energy

Washington, DC 20585

August 19, 2002

**MEMORANDUM FOR** JESSIE H. ROBERSON, ASSISTANT SECRETARY FOR  
ENVIRONMENTAL MANAGEMENT, EM-1  
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**FROM:**

BEVERLY A. COOK  
ASSISTANT SECRETARY  
ENVIRONMENT, SAFETY AND HEALTH

A handwritten signature in black ink that reads "Beverly A. Cook".

**SUBJECT:**

A Systems Approach to Safety Directives

I am requesting your assistance in an effort to examine a limited set of DOE Orders that establish operational safety requirements for DOE facilities or activities, and make recommendations for decisions on the disposition of those requirements. This effort is consistent with the executive management Panel's recommendations with respect to these Orders resulting from the recent Performance Based Contracts Order Review (the "Hopf review"). The Panel's recommendations are attached to Under Secretary Card's memorandum dated August 8, 2002.

The Panel recommended a working group be established to conduct a focused review of these Orders to assess the feasibility of creating an integrated structure for the requirements based on a "systems" approach. Instead of developing safety directives based on discrete safety functional areas (e.g., worker protection, nuclear safety, fire protection, maintenance, etc.), it might be more appropriate to develop and implement them based on an approach which recognizes that many safety functions and management systems must be integrated and coordinated to enhance performance. Our intent is to look at various options that could improve operations but avoid any changes to these directives that simply reshuffle requirements or create administrative burdens without enhancements to operations, safety or security.

The Office of Environment, Safety and Health is tasked to establish a working group that will review this limited set of Orders to identify opportunities to revise and improve these directives. The working group will make recommendations to Department of Energy senior managers by December 2002 on whether this approach will lead to safety or operational improvements in how we perform work. Please provide the name of a senior level representative from your organization

and the name of a representative from your cognizant field offices within 2 weeks of the date of this memorandum. The representative should have the authority to make initial decisions and provide additional technical and organizational support resources if needed.

The attached Charter provides more information on the objectives, functions, and products of this effort. My organization will provide all staff support to the process. You may contact Richard Black, 301-903-3465, [richard.black@eh.doe.gov](mailto:richard.black@eh.doe.gov), with the name of your representative or for more information.

Attachment: Working Group Charter

# A Systems Approach to Safety Directives

## Working Group Charter

### PURPOSE

This Working Group is chartered to review and recommend changes to a limited set of DOE Orders that establish operational safety requirements for DOE facilities or activities. The Working Group is to follow the recommendations of the executive management Panel for the Performance Based Contracts Order Review Project regarding the issues and the disposition of the requirements in these Orders. These recommendations are attached to Under Secretary Card's memorandum of August 8, 2002.

A primary objective of the group will be to review the Order requirements to determine if there is value in developing an integrated structure of the requirements based on a systems approach. The initial set of DOE Orders to review include:

- DOE O 414.1A, Quality Assurance;
- DOE O 420.1, Facility Safety;
- DOE O 433.1, Maintenance Management Program for DOE Nuclear Facilities;
- DOE O 440.1A, Worker Protection Requirements for DOE Federal and Contractor Employees; and
- DOE O 5480.20, Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities.

Other DOE Orders such as:

- DOE O 425.1B, Startup and Restart of Nuclear Facilities; and
- DOE O 5480.19, Conduct of Operations for DOE Facilities,

may be included in the scope of the review to fulfill the intent of the systems approach to integrated operational safety requirements.

The purpose of this "systems" review is to recommend an integrated set of performance requirements that, when viewed in the context of cradle to grave facility operations, will enhance safe and effective operations when implemented properly. Recommendations may include: merging or eliminating unnecessary or prescriptive requirements; adopting or referencing more voluntary consensus standards in lieu of DOE standards; promoting risk-based approaches for more flexible implementation; converting nuclear safety requirements of general applicability to rulemaking (10 CFR Part 830); or other recommendations.

## **BACKGROUND**

The development of DOE safety requirements as well as industry safety standards traditionally has been done using a safety functions or discipline specific approach. Safety functions (e.g., fire protection, criticality, worker protection, facility design, personnel training, etc.) were viewed as discrete safety areas. Requirements were implemented without regard to their impact on other safety requirements. Required integration between functional areas was accomplished in the field based upon the hazards present and within the context of the DOE Integrated Safety Management System (ISMS). Integration of requirements is also derived from a facility Documented Safety Analysis (DSA) that is required by the DOE Nuclear Safety Management Rule, 10 CFR Part 830. The “functions” versus “systems” approach to safety requirements has not detracted from safety but may impede effective implementation and operations because of the so-called “stovepiping” of safety functions.

DOE Orders are required by the Directives System to be periodically reviewed to ensure that established requirements are clear, needed and performance-based. The target Orders were recently evaluated by independent DOE teams (the “Hopf review”) and the teams made recommendations as to the improvement or disposition of the Orders. An executive management Panel reviewed the team reports and made further recommendations for the Orders. (See Under Secretary Card’s memo of August 8, 2002.)

This Working Group is now tasked to further review these Orders to determine if an integrated, systems approach to the set of requirements in the Orders can improve business practices and reduce unfavorable costs and impacts on contractors while still maintaining safety. The systems approach should (a) examine objectives before considering ways to solve specific problems, and (b) describe the system in general before proceeding to the specific. This evaluation of system changes must consider the Hopf team reports, any adverse impact on existing operations and available resources, any viewpoints of external and internal stakeholders, and any impact on existing contractor ISMS.

## **FUNCTIONS AND ACTIVITIES**

This Working Group should consider the following in the execution of this Charter:

**Organization:** The Field Management Council and other senior managers will review all final decisions and recommendations. The working group will be comprised of senior safety, program or operations personnel that have direct input into the senior managers. Internal and external stakeholders such as the Defense Nuclear Facilities Safety Board will provide input to or have representation on the working group as appropriate.

**Systems Approach:** Establish a systems approach to optimize the analysis, integration and management of the requirements contained in these Orders, and to provide justification for any requirement based on safety, security, mission or other need.

**Disposition of requirements:** Establish a process to document the recommended disposition of existing requirements (e.g., cross-walk).

**Cost Impacts:** Consider the costs and impacts of system and restructuring changes on existing programs, process or procedures, including required ISMS.

**Other Barriers:** Identify any barriers (economic, legal, management, operational) that may impede successful implementation of any recommendations for restructuring.

**Current Directives System:** Review the current Directives System and target Orders to determine whether requirements are performance-based and recommend changes to the requirements that eliminate unnecessary or redundant requirements, delete prescriptive “how to” requirements, or add needed new requirements to reflect emerging work, new hazards, grading methodologies, or up-to-date knowledge and approaches.

**10 CFR 830 Rule:** Consider the value of converting Order requirements to nuclear safety management requirements and the resulting impact on operations, missions, or existing programs, processes or procedures. Determine the appropriate disposition of Order requirements to Part 830, an integrated systems Order, or implementation guidance.

**Other Orders:** Consider the review of other DOE Orders that could provide requirements for operational assurance based on a systems approach.

**Organization/disposition of Requirements:** Consider the logical grouping of requirements based on such factors as:

- Traditional safety concepts or functional areas;
- Nuclear and non-nuclear;
- Worker, environmental, facility or operational safety;
- Facility life cycle – design, construction, operations, engineering, maintenance, decommissioning;
- Use of Safety/Requirements Identification Documents (S/RIDs) 18 functional areas;
- Use of DOE G 414.1-1A 54 functional areas; and
- Others.

## **MILESTONES –**

- 8/15/02 – Charter completed
- 8/27/02 – Establish membership in the working group
- 9/13/02 – Group develops draft “systems approach” flow map and project plan

- 10/18/02 – Initial requirements evaluation compiled with mapping, initial recommendations made and sent out for review (HQ, Field, Contractors, DNFSB)
- 11/22/02 – Initial reviews completed and comments submitted
- 12/13/02 – Comments resolved and final recommendations submitted for senior manager (e.g., FMC) level review
- 2/21/03 – Senior managers decision on recommendations with appropriate directions to the DOE organization(s) that need to implement the decision

**MEETINGS AND ADMINISTRATIVE PROCEDURES** – as needed to establish and meet milestones