



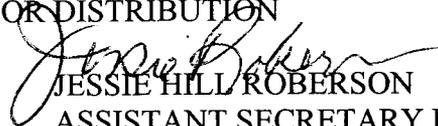
## Department of Energy

Washington, DC 20585

December 12, 2002

### MEMORANDUM FOR DISTRIBUTION

FROM:

  
JESSIE HILL ROBERSON  
ASSISTANT SECRETARY FOR  
ENVIRONMENTAL MANAGEMENT

SUBJECT:

Supplemental Guidance for Implementing DOE-STD-1120-98 at Environmental Management Nuclear Facilities

Reference:

Memo From Richard L. Black to Shirley J. Olinger, "Request for Clarification of 10 CFR Part 830, Subpart B, Safe Harbor Options," October 11, 2002

The Office of Environmental Management (EM) is responsible for a large number of environmental restoration and decommissioning facilities/activities that may be subject to safety basis requirements of 10 CFR 830, Subpart B. In accordance with the requirements, acceptable safe harbor methods for preparing documented safety analyses (DSAs) for these types of facilities are described in DOE-STD-1120-98, *Integration of Environment, Safety and Health into Facility Disposition Activities*, and provisions in 29 CFR 1910.120 or 29 CFR 1926.65, *Hazardous Waste Operations and Emergency Response* (HAZWOPER).

The attached supplemental guidance is provided to facilitate effective implementation of the safe harbor methods described in DOE-STD-1120 and HAZWOPER. Further, expectations and guidance are provided for facilities in deactivation or transition surveillance and maintenance category. For these facilities, the hazard and accident analysis expectations in the attached guidance are consistent with the methodology of DOE-STD-3011 and the recent technical clarification (see Reference) by the Office of Nuclear and Facility Safety Policy (EH-53) to Richland Operations Office regarding the use of DOE-STD-1120.

The attachments include the following guidance:

- Expectations on integration of DOE-STD-1120 and HAZWOPER, into facility/activity level safety basis hazard analysis;
- Applicability of DOE-STD-3009 evaluation guideline for determining the need for safety class structures, systems, and components;
- Expectations on meeting 830.205 related to technical safety requirements and approach to stepping out safety controls; and
- A general format and content of a DSA which satisfies 10 CFR 830 Subpart B, DOE-STD-1120/HAZWOPER and DOE-STD-3011.



My goal in issuing this guidance is to allow for more timely, cost effective and consistent application of DOE-STD-1120 across the EM complex. Therefore, you are requested to expeditiously implement this guidance for facilities where compliance has not yet been achieved or for consideration in future safety bases updates.

If you have any questions, or need clarification, please contact Mr. Dae Chung, Senior Technical Advisor, Office of Safety and Engineering, at (301) 903-3968.

Attachments

## Attachment 1

### 1.0 Supplemental Guidance for Implementation of DOE-STD-1120 at Environmental Management Nuclear Facilities

10 CFR 830, Appendix A, Table 2, establishes DOE-STD-1120-98, *Integration of Environment, Safety and Health into Facility Disposition Activities*, and 29 CFR 1910.120 or 29 CFR 1926.65, *Hazardous Waste Operations and Emergency Response* (HAZWOPER) as approved safe harbor methods applicable to environmental restoration and decommissioning activities. This EM Supplemental Guidance provides expectations for preparing a DSA that meets this safe harbor. DSAs prepared using this guidance will also satisfy the methods described in DOE-STD-3011 (including the currently proposed revision).

As required by 10 CFR 830.204, *Documented Safety Analysis*, all DSAs must: (1) describe the facility and work to be performed; (2) provide a systematic identification of natural and man-made hazards associated with the facility; (3) evaluate normal, abnormal and accident conditions; (4) derive hazard controls; (5) define the characteristics of safety management programs necessary to ensure safe operation; and (6) address criticality safety.

- 1.1 Simple qualitative hazard analysis techniques will typically suffice for environmental restoration activities, facilities in transition surveillance and maintenance, or decommissioning. These activities require both facility level and task level hazard analyses as outlined in DOE-STD-1120.
  - 1.1.1 A facility level hazard analysis shall evaluate the hazards and potential accidents and establish required facility controls, associated with the range of activities that will be conducted in the facility (e.g., as authorized by approved project plans). This analysis is the primary basis for preparing a DSA. See DOE-STD-1120, Section 3.2.1.
  - 1.1.2 A task level analysis shall be conducted as individual project tasks are being planned (e.g., characterization, material and equipment removal) . See DOE-STD-1120, Section 3.2.2. Tasks shall be screened using the USQ process to determine whether each task is within the safety basis described in the approved DSA (i.e., facility level analysis).
- 1.2 Although hazard category 3 nonreactor nuclear facilities, decommissioning, and environmental restoration activities are not expected to have sufficient hazardous/radioactive materials and energy sources that warrant the designation of safety class structures, systems, and components (SSCs), contractors are still expected to evaluate the impacts from an “uncontrolled release” of hazardous/radioactive materials in accordance with 830.204. Evaluation guidelines provided in Appendix A of DOE-STD-

3009 are to be used to judge the significance of these impacts and the need for safety class SSCs.

- 1.3 A basic component of the 10 CFR 830 safe harbor for decommissioning and environmental restoration is the implementation of OSHA requirements specified in 29 CFR 1910.120 or 1926.65 (HAZWOPER). HAZWOPER requires a written safety and health program that includes a Health and Safety Plan and a comprehensive work plan. Existing contractor programs that implement requirements such as DOE O 430.1, "Life Cycle Asset Management," DOE O 151.1A, "Comprehensive Emergency Management System," and DOE P 450.4, "Integrated Safety Management System" address many of the components of HAZWOPER. Implementation of applicable programs that may be unique to HAZWOPER (e.g. material handling) or directly affect hazard or accident analysis may be considered for specific inclusion in the DSA and elevation to TSR level control.
- 1.4 10 CFR 830.205, *Technical Safety Requirements*, suggests that provisions of 29 CFR 1910.120 or 1926.65 may be used to develop the appropriate hazard controls. While controls at EM facilities/activities will consist predominately of administrative controls, they must still be conveyed in TSRs using guidelines provided in DOE G 423.1-1, "Implementation Guide for Use in Developing Technical Safety Requirements." Also, design features and safety SSCs should be established if needed based on the hazard analysis.
- 1.5 DSAs should include criteria for "stepping out" of controls as hazardous/radioactive materials are removed from a facility. Specific analysis may be required to support the established points when a control is no longer necessary. These points may be pre-negotiated between DOE and the contractor, such that removal or disablement of each control can be accomplished upon notification and verification that "stepping out" criteria have been met. Section 3.3.2 of DOE-STD-1120 provides criteria that should be used.

## **Attachment 2**

### **2.0 DSA Format and Content**

#### **Applicable To Safe Harbor Methods of DOE-STD-1120/HAZWOPER and DOE STD-3011**

DSAs prepared in accordance with the following format and content guidelines will meet the intent of either DOE-STD-1120/HAZWOPER or DOE-STD-3011 safe harbors.

#### **Introduction**

- General description and location of facility/activity(ies) (including prior site/facility activities) covered by the DSA (detailed site characteristics as discussed in DOE-STD-3009 are only required for facilities with potential for an accident resulting in consequences that may challenge evaluation guidelines)
- Brief description of organizations and personnel with responsibility for facility/activity safety
- General summary of planned activities included in surveillance and maintenance (S&M) work plans, or facility decommissioning plan or environmental restoration plan
- Summary of facility hazard categorization (breakdown for facilities covered by DSA)

#### **Facility Description**

- Brief summary of facility/activity operational history
- Discussion of facility life cycle stage and planned operations (equipment maintenance, surveillance activities, anticipated intrusive work contamination removal, maximum inventory to be removed)
- Planning for Future Life Cycle Phase (reference planned future activities if available)
- Description of any remaining active and passive safety SSCs

#### **Hazard and Accident Analysis**

- Identification of remaining hazardous/radiological material inventory (quantities, type, form and location, as well as uncertainties used in estimating inventory)
- Nuclear Facility Hazard Classification- per DOE-STD-1027
- Summary of hazard analysis (HA) methods used
- Summary table of HA results, including identification of preventive and

- mitigative hazard controls
- Discussion of criticality potential
- Representative and unique accident scenario(s) and their consequences
- Discussion of the need for safety SSCs

## **Hazard Controls**

- Engineering controls or design features including functional description, boundary discussion, acceptance criteria and any step-out criteria for retiring controls (if applicable)
- Administrative Controls (consider the following as examples: inventory control, ignition/energy source controls, commitment to the safety management programs (SMPs))
- TSR derivation and discussion (if applicable)

## **Safety Management Programs**

If SMPs exist at the site level, the DSA should rely on these programs. It is not necessary to repeat information for each facility/activity. Several elements, such as training, emergency response, and work control are redundant to HAZWOPER requirements and should be used to meet these similar requirements (e.g., comprehensive work plans, safety and health program) to the maximum extent possible. Some elements, such as medical surveillance may need to be specifically addressed. The discussion should include a brief description of the program and aspects of the program that are required to support assumptions or conclusions of the hazard or accident analysis. The following list is sample of SMP's that may be applicable to deactivation, transition S&M, decommissioning and environmental restoration activities:

- Medical Surveillance – Discuss commitment to implement a medical surveillance program as applicable, including bioassay as required by 10 CFR 835 for radionuclides, as appropriate.
- Fire Protection – Discuss aspects of the fire protection program that are applicable to the work activities that are authorized (i.e., combustible control, ignition source control) and any aspects related to retirement of active fire suppression and detection systems in favor of administrative controls as the facility progresses through decommissioning.
- Surveillance and Maintenance–Discuss provisions for maintaining SSCs such that hazardous/radioactive material confinement due to facility aging will not be compromised during periods of long-term S&M.
- Work Control - Discuss elements of the work control process that ensures evaluation of task-specific safety and health hazards that may affect workers (i.e., Job Hazard Analysis (JHA)) and establishment of controls identified through the JHA. This also includes the approach used to authorize work such as work control documents (work

package, procedure, etc.).

- Criticality Safety Program - Discuss provisions for maintaining criticality safety and monitoring/alarm functions for those facilities that present a potential for criticality or the basis for concluding it is not applicable.
- Configuration Management - Discuss provisions for establishing and maintaining an appropriate understanding of the operational system configuration throughout changes in the facility's remaining life.

# memorandum

**DATE:** October 11, 2002

**REPLY TO**

**ATTN OF:** Office of Nuclear and Facility Safety Policy:RBlack:301-903-8253

**SUBJECT:** Request for Clarification of 10 CFR Part 830, Subpart B, Safe Harbor Options

**to:** Shirley J. Olinger, Assistant Manager for Safety and Engineering, Richland Operations Office (RL)

This letter is in response to your June 20<sup>th</sup> request for clarification of 10 CFR Part 830 safety basis provisions concerning:

1. The use of DOE-STD-1120-98 as a safe harbor in the development of the Documented Safety Analysis (DSA) for deactivation activities at a DOE nuclear facility.
2. The use of the classification scheme in 10 CFR Part 71, instead of DOE-STD-1027-92, for categorization of nuclear materials for onsite shipments.

## **Use of DOE-1120**

Table 2 of 10 CFR 830, Subpart B, Appendix A lists DOE-STD-1120 as a safe harbor for the development of DSAs only for decommissioning and environmental restoration activities. Table 2 lists DOE-STD-3009 or DOE-STD-3011-94 as the appropriate safe harbors for deactivation activities. You requested clarification on whether DOE-STD-1120-94 can be used also as the safe harbor for deactivation activities.

You are correct that DOE-STD-1120 was developed for a complete range of facility disposition activities. However, the use of DOE-STD-1120 as a safe harbor for the development of a DSA reflects the distinction of using DOE-STD-1120, coupled with the use of 29 CFR 1910.120 for the development of a safety basis in the form of a Health and Safety Plan, when radioactive materials are low-level, fixed, contained, treated, or removed. These activities are defined in 10 CFR 830 as decommissioning or environmental restoration. You can use DOE-STD-1120 guidance for deactivation activities, but that guidance indicates that an accident/hazards analysis must be developed by the methodology of DOE-STD-3009 or DOE-STD-3011-94. (See Table 3 in Volume 1 of 2 and Volume 2, Appendix I, page 1-3).

## **Use of 10 CFR Part 71**

The question presented here is: Can RL categorize onsite shipments by the classification scheme in 10 CFR Part 71, as opposed to the categorization of shipments by DOE-STD-1027-92 methodology as required by 10 CFR 830.202?

The answer to this question requires an understanding of the intent of categorization under

Subpart B of Part 830. Preliminary categorization of nuclear facilities or activities per DOE-STD-1027 is required to determine what facilities or activities require the development of a safety basis consistent with Subpart B requirements. DOE-STD-1027 is a DOE-approved and proven methodology to make that determination.

As we understand, RL has chosen to develop a site-wide Transportation Safety Document (TSD) in accordance with DOE O 460.1A and DOE G 460.1-1, a permitted safe harbor in Table 2 of Appendix A, that will apply to all onsite shipments. As such, RL will have a rule compliant DSA for all onsite shipments. Further categorization per DOE-STD-1027 is not needed because the intent of the rule is met.

We also believe that is appropriate to further classify onsite shipments subject to the TSD per NRC requirements in 10 CFR Part 71. This classification scheme is endorsed by DOE O 460.1A. RL will classify onsite shipments in this manner to determine what level of analysis and controls is required. We believe that this classification scheme is generally consistent with the intent of Part 830, Subpart B in that the A2 values listed in Part 71 are within the values for Hazard Category 3 in DOE-STD-1027 with the possible exception of the five radionuclides that you identified in your memorandum. If these materials are encountered, we expect that the RL Unreviewed Safety Question procedure will determine the need for any additional analysis and controls. Additionally, we believe that your application and use of A-2 values from 10 CFR Part 71 needs to specify how multiple isotopes in one package, or multiple packages in one shipment, will be handled relative to hazard categorization.



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Office of Nuclear and  
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cc:

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