DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Staff Issue Report

October 29, 2003

MEMORANDUM FOR: J. K. Fortenberry, Technical Director

COPIES: Board Members

FROM: D. Burnfield
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SUBJECT: Documentation and Practices Related to Activity-Level Work Planning at the Rocky Flats Environmental Technology Site

This report documents a programmatic review focused on the general aspects of work planning and control for tasks associated with deactivation and decommissioning (D&D) efforts at the Rocky Flats Environmental Technology Site (RFETS). This review was conducted during September 30–October 2, 2003, by members of the staff of the Defense Nuclear Facilities Safety Board (Board) D. Burnfield, J. Contardi, and C. Goff, assisted by outside expert D. Volgenau and supported by a review of work packages conducted by outside expert R. West during August 2003.

Background. At RFETS, procedures for work planning and execution are prescribed principally in an Integrated Work Control Program (IWCP) manual and in a Conduct of Operations manual. These directives provide procedures for preparing and performing six types of work packages: (1) Type 1 Work Packages, used for one-time activities, which may contain engineering documentation; (2) Standard Work Packages (SWPs), intended for repetitive work activities, including D&D; (3) Technical Plans and Procedures; (4) Preventive Maintenance Work Packages; (5) Craft Work Packages (CWPs), for work not requiring step-by-step instructions and not resulting in a design basis modification; and (6) Emergency Work.

In the recent past, the majority of the work activities associated with D&D has been accomplished using the SWP and CWP processes. The site's IWCP web page provides a detailed planning guide for preparing work packages and contains a D&D Best Practices Collection (planning guide). Although the use of these guides is optional, the stated intent is that they be used in developing, approving, and changing work packages and procedures.

Much of the D&D work at the site is being completed through the use of subcontractors. Provision has been included in the work directives to permit the use of commercial approaches for this work. These approaches must meet the requirements of Integrated Safety Management (ISM) and must be approved by the RFETS contractor.

Observations and Comments. The Board's staff observations and comments are presented below for each of the five core functions of ISM.

Define the Scope of Work—At RFETS, work is assigned to individual projects through a standard work breakdown structure process. Of the five projects at RFETS, three are responsible for buildings in which nuclear material processing was formerly conducted. One project has responsibility for non-nuclear-related structures, and another is assigned responsibility for the management of waste. The project managers set the goals, scope, and priorities for work under their projects. Each project operates independently, with its own internal organizations responsible for work control, radiological protection, engineering, and fire protection. The projects are required to follow the site work directives, but have the authority to modify them to suit work requirements. This arrangement can lead to inconsistency in work planning and execution across the site. It is not clear whether this flexibility aids in the safe completion of work, or hinders it.

The staff reviewed the planning and execution of several SWPs. A number of the work packages had not been made job-specific (tailored) as required by the site's IWCP manual. Work boundaries were not well established, and specific task assignments were not clearly defined. A single work package was used for two different work scopes. This review raised significant questions as to whether the tailoring of SWPs is being performed in a thorough and effective manner.

The detailed planning guide for preparing work packages provided on the site's IWCP web page does not appear to be utilized routinely. Although the use of a single SWP for multiple work scopes is not ideal, the staff's interviews of workers and line management revealed that this process is clearly understood. Given that radiological D&D activities at RFETS will be completed in a relatively short time frame, the staff believes it would be counter productive to change the format of the SWPs and risk confusing the workers and management. However, better implementation of the IWCP is required to ensure worker safety.

Analyze the Hazards—Site directives mandate work site walkdowns by a planning team to assist in identifying potential hazards associated with the planned work. Walkdowns appear to have been completed for the SWPs reviewed by the staff. However, this effort was not well correlated with the Job Hazard Analyses (JHAs) conducted initially for the general scope of the work under the SWP. JHAs for the specific work to be conducted were not always completed, raising doubt as to whether all of the hazards associated with the specific work planned had been identified.

Develop and Implement Hazard Controls—The SWP controls were not always tailored to the specific work planned. The adequacy of the controls identified and provided for work at the activity level could not be assured because of the weaknesses in the processes used to identify and analyze hazards.

Perform Work Within Those Controls—The responsible manager has the responsibility to ensure that work packages are properly prepared. He is assisted by a number of others in this effort, many of whom sign the prepared package certifying their agreement. Although the site directives are clear regarding these responsibilities, the staff's review of scheduled work

packages revealed confusion as to the correct order for signing. This raises the question of whether changes to the work procedures could be incorporated without the knowledge or approval of the responsible manager.

Prior to the start of work, packages are released for accomplishment by the Facility Manager or Configuration Control Authority (as appropriate). This individual is responsible for reviewing the work package, preparations, and potential impact on facility operations. The site's conduct-of-operations manual provides for the conduct of pre-evolution briefings (PEBs) prior to work commencement. The evolution supervisor may use either of two formats provided or a project-specific form. Allowing this much latitude in PEBs could weaken their effectiveness. Review of the PEB documentation for the selected work packages revealed that they had not been tailored to the work to be conducted. A work package status log is required to be included in each work package. This log provides the foreman/supervisor with an area in which to record work status, including changes to the package. Site directives provide little detail on how this area is to be used. The logs in the packages reviewed revealed little meaningful data.

Recent events have revealed weaknesses in the implementation of the IWCP at RFETS. Previous reviews by the Board's staff indicated that the significantly deficient implementation of the work control process contributed to the May 6, 2003, fire that occurred in Building 371. More recently, several events revealed additional weaknesses in work planning and execution. One area of particular weakness was proper reaction to the unexpected during the accomplishment of work. This situation led contractor management to take several actions, including a temporary stop-work order for all craft work, a reemphasis on the responsibilities of key personnel, and a discussion of expectations for work planning and execution. Evaluation of the effectiveness of this effort will require time. One positive result was an initiative to include digital photography in the work packages to assist in the definition of work boundaries. No modifications to site-specific manuals and codes of practice are currently planned as part of these actions.

Provide Feedback and Continuous Improvement—The IWCP manual dictates requirements for providing feedback, including independent assessments, post-job reviews, and the like. The RFETS contractor uses these and other systems, both formal and informal, for purposes of feedback and improvement. The success of these efforts has been mixed. The contractor acknowledges weakness in capturing the lessons learned from work and is making an effort to improve in this area. Two informal systems using pre-printed cards have recently been initiated: one is used to examine worker attitudes, while the other is used to identify good and bad work situations immediately at the job site. The contractor believes these systems are providing useful input to improve the work environment. Daily meetings among managers are held to examine the causes and impacts of adverse events that have occurred within the last day. These meetings appear useful for the discussion of causes and preventive measures.

The contractor's processes for independent assessment are not effective. The assessment organization consists of two people. Individuals from the projects are used to conduct assessments under the direction of these two individuals. A review of the assessments conducted

within the last year revealed that they were not effective in identifying areas for improvement in the work planning and execution processes. This weakness in effective self-assessment is of concern, especially considering the Department of Energy's (DOE) initiative to reduce its oversight staff. Staffing in the DOE Rocky Flats Field Office group responsible for safety oversight is to be reduced by 50 percent by January 2004.

Subcontractor Oversight. The site's IWCP manual includes a provision that permits the use of commercial approaches for the contracting and performance of D&D activities. A subcontractor is allowed to utilize either the site's or its own work procedures to accomplish assigned tasks. The subcontractor's approach must meet the requirements of ISM and must be approved by the site contractor. This process was reviewed for one current site subcontractor. The subcontractor's procedures for work planning and control had been approved by the site contractor. These procedures did not incorporate all of the principles of ISM. For example, JHAs were completed for general tasks instead of for the specific work to be accomplished. Worker safety at the activity level could not be assured. Control of subcontractor work planning and execution processes needs to be improved.