

John T. Conway, Chairman  
A.J. Eggenberger, Vice Chairman  
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# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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November 13, 2002

The Honorable Everet H. Beckner  
Deputy Administrator for Defense Programs  
National Nuclear Security Administration  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0104

Dear Dr. Beckner:

The Defense Nuclear Facilities Safety Board (Board) recently reviewed several Safety Analysis Reports (SARs) and Hazard Analysis Reports (HARs) developed for the defense nuclear facilities at the Pantex Plant, as well as the Safety Evaluation Reports (SERs) that document approval by the Office of Amarillo Site Operations (OASO). A number of the SARs/HARs, including those covering the nuclear material facilities, the paint bay, the disassembly and inspection bays and cells, and the W62 disassembly and inspection process, rely on continuous air monitors (CAMs) and radiation alarm monitors (RAMs) to provide both occupational safety and accident protection for workers. In many accident scenarios, these monitors function to prevent significant exposure to radiological hazards by alerting workers to evacuate affected areas.

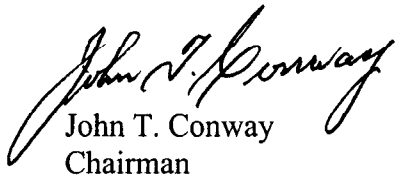
Under the methodology provided by the Department of Energy (DOE) standard, DOE-STD-3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses*, these engineered controls should be designated as safety-significant, and should be provided the treatment that designation affords. However, these monitors are not designated as safety-significant in the newly developed SARs/HARs for the Pantex Plant. The Pantex Plant contractor assumes the monitors are present because they are required by the radiation protection program, and therefore does not designate them as safety-significant for accident mitigation purposes.

Although the radiation protection program does require the presence of these monitors, that program is designed to apply the As Low As Reasonably Achievable (ALARA) principle to occupational exposure, not to defend workers in low frequency, high consequence accidents. In its SER for the nuclear material SAR, OASO recognizes that this occupational safety program does not address the CAMs/RAMs in a manner commensurate with their assumed safety function in an accident environment. However, instead of designating the monitors as safety-significant controls as required by DOE-STD-3009-94, OASO includes a pre-start condition of approval in the SER to establish an administrative control for the CAM/RAM portions of the radiation safety program. This administrative control imposes two requirements: (1) work is required to stop when a trouble light illuminates on a CAM/RAM, and (2) evacuation is required in response to an alarm.

These actions fall short of providing the level of effectiveness and reliability expected for the life-safety functions of the CAMs/RAMs. Designation as safety-significant would have provided Technical Safety Requirements for the CAMs/RAMs themselves, rather than for the program under which they are administered. Furthermore, as safety-significant controls, allowable outage times, limiting conditions of operation, and surveillance requirements would be established and protected under these Technical Safety Requirements. Finally, designation as safety-significant would make these controls subject to corresponding quality assurance requirements for replacement and maintenance once such requirements were established. The protections afforded a safety-significant control increase assurance that the control will fulfill its safety function, as is appropriate for controls that provide life-safety functions under accident conditions.

The Board is concerned about the introduction of localized conventions at the Pantex Plant that diminish quality requirements for safety systems. Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board would like to be briefed within 60 days on the actions that will be taken to ensure that controls such as the CAMs/RAMs that are relied upon to protect against significant exposures to radiological hazards at the Pantex Plant are afforded the protection required by safety-significant designation.

Sincerely,



John T. Conway  
Chairman

c: The Honorable Jessie Hill Roberson  
The Honorable Beverly Ann Cook  
Mr. Mark B. Whitaker, Jr.