DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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October 11, 2005

The Honorable Clay Sell
Deputy Secretary of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Deputy Secretary Sell:

The Defense Nuclear Facilities Safety Board (Board) has reviewed the Department of Energy's (DOE) Action Plan, *Lessons Learned from the Columbia Space Shuttle Accident and Davis-Besse Reactor Pressure Vessel Head Corrosion Event*, to fulfill Commitment 17 to DOE's Implementation Plan for Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*. The Board accepts this plan and its identification of top-level lessons and associated corrective actions to address these lessons. The Board notes that several lessons in the DOE Action Plan are too narrowly focused to fully capture all pertinent elements of the lessons derived from the Columbia Space Shuttle Accident and the Davis-Besse event. Several of the corrective actions also need to be strengthened. The plan appropriately notes that "Assessing Implementation Effectiveness" is critical to the success of the Operating Experience Programs; however, the stated metrics could be more quantitative. The Board's staff is available to help develop effective performance measures.

As noted in the Board's August 5, 2005 letter, DOE is encouraged to capture lessons learned from other events, such as the fire at British Petroleum's Texas city refinery and the pipe break in the Thermal Oxide Reprocessing Plant at Sellafield, before the new DOE Operating Experience Program is fully implemented. The Board further believes that as new events occur, they should be evaluated and included in the Operating Experience Program, as appropriate.

The enclosed list provides comments to help strengthen the lessons and corrective actions in the Action Plan. Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests that DOE provide a briefing to the Board within 45 days on the approach and schedule to address these comments and any additional actions required.

Sincerely,

A. J. Eggenberger
Chairman

c: Dr. Bruce M. Carnes
Mr. Mark B. Whitaker, Jr.

Enclosure

Comments on the Department of Energy Action Plan,
***Lessons Learned from the Columbia Space Shuttle Accident and Davis-Besse Reactor Pressure Vessel Head Corrosion Event*, July 29, 2005**

Lesson #1 Operating Experience: The development of the Department of Energy (DOE) Corporate Operating Experience Program and a new order to support the program are good first steps. However, it is not clear that developing a new order on the Corporate Operating Experience Program will achieve rapid and meaningful incorporation of lessons into training, maintenance and work planning, directives and standards development, and design and construction, without incorporating additional requirements into other directives to mandate the use of lessons. Specifically, the action items do not show how DOE and its contractors are planning to incorporate lessons learned into training to address a key lesson from the Naval Reactors Program of "relentless and innovative training founded on lessons learned both inside and outside the program."

Lesson #2 Mission and External Influences: The resolution of this lesson does not adequately address the impact of budget reductions on federal technical personnel. It was cited in the Nuclear Regulatory Commission (NRC) report, *Davis-Besse Reactor Vessel Head Degradation Lessons-Learned Task Force Report*, that regional staffing and resource issues had challenged NRC's ability to provide effective oversight. This demonstrates that external influences can come from various directions. DOE established two Central Technical Authorities to mitigate external influences by granting them the authority to balance program and safety priorities. The Action Plan does not provide for the creation of an activity that develops an informed process to help the Central Technical Authorities gather the appropriate criteria and information required to make fully informed decisions. An informed decision balances all elements including risk, safety, budget, and resources with an appropriate weighting toward safety.

Lesson #3 Normalizing Deviations: The Action Plan focuses on compliance issues rather than the more fundamental issue identified in the Challenger and Columbia Space Shuttle accidents of human acceptance of repeated off-normal conditions. There are a number of recent DOE occurrences associated with nuclear weapon disassembly, nuclear material measurements, plutonium handling, and radioactive liquid transfers for which the prevailing attitude was, "We have done it that way before and nothing happened." The solutions to avoiding this acceptance of deviations must occur at all levels of management as well as on-the-floor. The Action Plan needs to address this important lesson.

Lesson #4 Technical Inquisitiveness: Improving communications and establishing a formal Differing Professional Opinion process are important to improving technical inquisitiveness. The Action Plan addresses both of these issues, however, this lesson and its resolution do not address two noteworthy elements stemming from the Davis-Besse event: (1) the lack of a questioning attitude by managers, and (2) the ineffective and slow corrective actions by management. These managerial shortcomings at the Davis-Besse Nuclear Power Station contributed to the growing apathy among the workforce in communicating problems. The DOE plan does not address the need to develop a highly visible management attitude that takes immediate action to resolve safety issues as a matter of standard practice.

Lesson #8 Organization Staffing and Qualifications: In the Action Plan, the Working Group specifically recommends that the Federal Technical Capability Panel, "institute a training program and provide materials tailored for safety oversight staff and management in matters related to the acquisition process, program management, contract management, and interactions with the Central Technical Authority's technical staff." This action has not been captured in the Implementation Plan commitments for Recommendation 2004-1.