



Department of Energy

Washington, DC 20585

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The Honorable Peter S. Winokur
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004

Dear Mr. Chairman:

This letter is to inform you that the Department of Energy (DOE) has completed Action 1-3 of the Department's Implementation Plan (IP) for Defense Nuclear Facilities Safety Board (Board) Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant (WTP)*. The deliverable for Action 1-3 is a 'letter to the Board communicating implementation of the Bechtel National Incorporated (BNI) safety culture oversight process and providing a description of the process and federal oversight of the process'. The enclosure to this letter provides a description of the present BNI safety culture oversight process and a description of federal oversight of the process.

I recognize that the BNI safety culture oversight process and its implementation as described are still maturing and need improvement. DOE also expects to make improvements and changes to federal oversight of BNI's safety culture process. The Office of Environmental Management (EM) and the Office of River Protection (ORP) have reviewed the Office of Health, Safety and Security (HSS) Independent Oversight Assessment of Nuclear Safety Culture and Management of Nuclear Safety Concerns at the Hanford Site Waste Treatment and Immobilization Plant (HSS WTP Safety Culture 2012 Report -- Action 1-2 of the IP) and accept the recommendations in the report (letter attached). We are now focused on developing and implementing corrective actions (Actions 1-4 and 1-8 of the IP) in response to issues and recommendations in the HSS report.

If you have any questions, please contact me or Mr. James Hutton, Chief Nuclear Safety Advisor, at (202) 586-5151.

Sincerely,

David Huizenga
Acting Assistant Secretary for
Environmental Management

Enclosures



Waste Treatment and Immobilization Plant (WTP) Safety Culture Oversight

This enclosure describes the present BNI safety culture oversight process, and then describes the federal oversight approach within each of the following Department organizations:

- The Office of River Protection
- The Office of Environmental Management Headquarters
- The Chief of Nuclear Safety
- The Office of Health, Safety and Security

Description of BNI Safety Culture Oversight Process

Specific to the nuclear safety and quality culture (NSQC) at WTP, BNI has articulated BNI management expectations and direction through their *Nuclear Safety and Quality Culture Policy*. The policy defines a NSQC as: "An organization's values and behaviors modeled by its leaders and internalized by its members, which serve to make worker safety and quality the overriding priorities on the Project." This policy also provides the processes for implementing recommendations for ongoing management of nuclear safety culture as described in Nuclear Energy Institute report NEI 09-07, *Fostering a Strong Nuclear Safety Culture*.

Implementing this policy, BNI has developed 24590-WTP-GPP-MGT-061, Rev. 0, *WTP Nuclear Safety and Quality Culture*. This procedure contains BNI management expectations for behaviors and activities that are intended to augment and enhance the NSQC at the WTP. The procedure states: "A strong NSQC is essential for all work conducted at the WTP to ensure that the attitudes, activities, and accountabilities demonstrated by project employees and subcontractors represent and perpetuate the fundamental principles, attributes, and behaviors necessary for the WTP to meet or exceed nuclear safety and quality requirements." It also describes the necessary NSQC oversight activities and provides references to lower-level implementing procedures.

Within the WTP contractor organization management, the highest level oversight structure is the WTP Executive Review Board (ERB), which is comprised of senior BNI site management. The WTP NSQC procedure requires that the ERB: receive regular (at least quarterly) input from lower level oversight processes (described below); communicate issues and trends within its own company, as well as with DOE and stakeholders; and direct project response to oversight results.

For NSQC, the primary input to the WTP ERB is from the Nuclear Safety and Quality Culture Monitoring Panel (NSQCMP). This panel, currently meeting monthly, monitors inputs indicative of the health of the WTP NSQC to identify potential concerns that merit management action. BNI procedures require that the

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panel periodically (at least quarterly) assesses NSQC trends or potential issues and provide a report to the WTP ERB.

The following BNI oversight processes provide input to the NSQCMP:

- BNI management engagement and time in the field – accomplished via three mechanisms: senior supervisory watches, management observation program (at commissioning), and the management workplace visitation program.
- BNI corrective action review board (PIRB-Performance Improvement Review Board) to provide feedback on the effectiveness of organizational learning from the corrective action process.
- NSQC-related employee surveys (conducted biennially).
- NSQC-related internal assessments are conducted annually with one of the three NSQC focus areas assessed each year so all areas are completed within three years.
- NSQC-related external assessments are conducted as necessary by nuclear industry experts from outside the project and company to augment BNI oversight.

Description of ORP oversight approach

ORP reviewed the WTP Nuclear Safety and Quality Culture procedure at the end of FY2011. BNI's safety culture oversight process is still maturing. ORP will continue to evaluate BNI's safety culture oversight process and its implementation. In accordance with ORP oversight processes, ORP will provide direction and feedback to BNI on safety culture oversight and management. As described in Action 1-4 of the IP, DOE will direct BNI to amend the NSQC plan to include corrective actions for recommendations and issues from the HSS WTP Safety Culture 2012 Report (Action 1-2 of the IP), and to the BNI external assessment. ORP expects that improvements and changes to the BNI safety culture oversight process and its implementation will be needed based on experience, and direction and feedback from ORP based on federal oversight of implementation of the BNI safety culture oversight process.

ORP developed an annual, in-depth, resource-loaded Integrated Assessment Schedule of Oversight Activities (more than 200 WTP-related assessments and surveillances are planned for FY2012). These activities review nearly all aspects of the design, procurement, installation, and testing of WTP structures, systems, and components as well as quality assurance, project management, industrial health and safety, and nuclear safety programs. Oversight activities include evaluation of the adequacy of contractor procedures as well as their implementation. ORP oversight is conducted according to a local assessment procedure that also provides requirements for the training and qualification of assessors.

ORP will evaluate its Integrated Assessment Process and make any necessary changes by March 2012 to enable specific identification of NSQC oversight activities in the annual Integrated Assessment Schedule. The ORP assessment plans and

applicable surveillance guides for those NSQC oversight activities will reference the recently released DOE G 450.4-1C, *Integrated Safety Management System Guide* to ensure assessors draw from the safety culture focus areas and associated attributes provided in the guide, as well as from the links to methods for evaluating existing safety culture. Briefings for all ORP staff, beginning in February 2012, will help promote a consistent understanding of a healthy NSQC and ORP's oversight efforts toward that end.

Issues are reviewed by ORP management and transmitted to BNI for corrective action. ORP monitors BNI's corrective action program performance, ensuring ORP oversight issues are entered into the BNI tracking system and that the issues receive a NSQC screening in accordance with the BNI process. ORP conducts formal quarterly Assessment Program Reviews of the completed ORP oversight activities, monitoring oversight performance and contractor performance trends. Specific discussion of safety culture oversight efforts, results and trends will be added to the agenda of these quarterly meetings, along with guidance on ORP expectations, beginning in April 2012. These quarterly reviews enable senior management to evaluate the effectiveness of ORP oversight efforts, provide feedback to ORP staff, and redirect oversight efforts as necessary to address emergent issues.

A sample of the planned 2012 ORP oversight activities that will involve review of BNI's NSQC processes include:

- Surveillances of BNI response and corrective action effectiveness at resolving safety culture issues identified in the HSS WTP Safety Culture 2012 Report
- Surveillance of BNI management of Black Cell safety class mixing systems, piping, and vessel wear allowance issues
- Surveillance of BNI actions to address BNI Low-Activity Waste Management self-assessment issues
- Assessment of BNI processes and capabilities to deliver, review, and approve Documented Safety Analyses for the WTP project
- Assessment of the BNI design and engineering process
- Surveillance reviews of WTP facility systems' design
- Surveillance reviews of Preliminary Documented Safety Analysis design features
- Surveillances of Integrated Safety Management System implementation

ORP performs oversight of the BNI NSQCMP sessions to observe BNI management safety culture oversight processes. ORP monitors the results of the NSQCMP, maintaining an awareness of NSQC activities and issues. ORP also monitors the monthly BNI Employee Concerns Program status meetings and bi-weekly BNI Project Issues Evaluation Report (PIER) meetings to provide timely evaluation of emerging NSQC issues.

ORP expects to make improvements and changes to its oversight process (Action 1-8 of the IP) in response to issues identified in the HSS WTP Safety Culture 2012 Report.

Description of EM Headquarters Oversight Approach

The mission of the Office of Safety, Security, and Quality Programs includes EM's Integrated Safety Management oversight activities associated with ORP, WTP and DOE's response to DNFSB Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant*. The Office of Safety Management is responsible for ensuring continuous improvement associated with implementation of Integrated Safety Management Systems (ISMS) across the program and to serve as a focal point for internal/external ORP and WTP oversight organizations. The Office of Safety Operations Assurance is responsible for providing oversight and assistance to improve the effectiveness of ORP and BNI safety and health oversight programs and management systems such as operational awareness activities, conduct of operations, work planning and execution, and assessments. The Office of Standards and Quality Assurance has responsibility for ensuring that necessary technical, safety, and quality requirements and standards are properly identified and adequately implemented for the WTP project in a timely and technically defensible manner.

Specific activities are planned to evaluate BNI's safety culture oversight process and ORP's federal oversight of the WTP safety culture. These activities will be incorporated into the EM Integrated Oversight Schedule by the end of April, 2012. Specific activities being planned include:

- Review information and recommendations from the HSS WTP Safety Culture 2012 Report (Action 1-2 of the IP) and monitor ORP's approach to corrective action plan evaluation, ORP's tracking of action closure, and ORP's evaluation of corrective action effectiveness;
- Review ORP formal direction to BNI on safety culture;
- Review ORP's approach to measuring the adequacy of BNI's WTP Nuclear Safety and Quality Culture Policy and its implementing mechanisms and processes and perform independent evaluation of selected elements of the policy and processes;
- Review ORP's approach for oversight of the BNI safety culture process including independent evaluation of selected BNI safety culture oversight activities;
- Review ORP's approach to managing the BNI contract; as evidenced by the contract performance evaluation plan, project performance measures, and contract fee structure and incentives;
- Performing a review of ISMS implementation at ORP and reviewing ORP's assessment of BNI ISMS implementation;
- Participation on the federally led WTP Safety Basis Review Team (SBRT) responsible for the development of the WTP Documented Safety Analysis (DSA) Safety Evaluation Report (SER).

Description of CNS Oversight Approach

The responsibilities for the Central Technical Authority and Chief of Nuclear Safety and staff are described in the Department's Implementation Plan in response to Defense Nuclear Facilities Safety Board Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Facilities*, and as prescribed in the April 26, 2005, and June 22, 2007, memoranda from the Secretary of Energy. Specific responsibilities relating to DOE nuclear safety requirements were also detailed in DOE O 410.1, *Central Technical Authority Responsibilities Regarding Nuclear Safety Requirements*.

Part of these responsibilities is to maintain operational awareness of the implementation of nuclear safety requirements and guidance, consistent with the principles of Integrated Safety Management, across the DOE Nuclear Security and Energy complex. Awareness is accomplished by working with Headquarters, Field Offices, and Facility Representatives to implement DOE O 226.1B, *Implementation of DOE Oversight Policy*. This includes CNS staff participation in Construction Project Reviews, Headquarters line management oversight, Field Office oversight, Operational Readiness Reviews, and Documented Safety Analyses reviews to evaluate the adequacy of safety controls and implementation. Through these activities the CNS can maintain awareness of the state of safety culture.

Specifically for the WTP, the CNS and staff have been engaged in a number of related activities including conducting site visits, participating in Construction Project Reviews and managing the DPO process for WTP related issues. The DPO involving the adequacy of black cell system design with respect to erosion and corrosion is an ongoing effort. Several site reviews have been conducted to review QA, employee concerns, and startup and commissioning schedules. Participation in Construction Project Reviews continues and has been ongoing for more than two years. Regular oversight of Bechtel's Nuclear Safety and Quality Culture Monitoring Panel Committee occurs monthly with review and follow-up of issues occurring between sessions.

Examples of upcoming CNS activities supporting WTP include:

- Monthly oversight of BNI's NSQCMP;
- Participation in WTP Construction Project Reviews with the last occurring in August 2011 and the next currently scheduled for May 2012;
- Participation on the Safety Basis Review Team (SBRT);
- Performance of the WTP Erosion Corrosion Review schedule for completion in June 2012; and
- Periodic CNS Staff visits, that have been ongoing for several years, to be coordinated as a part of the SBRT

Description of HSS Oversight Approach

HSS Office of Safety and Emergency Management Evaluations inspection activities are performed in accordance with DOE Order 227.1, *Independent Oversight Program*, and applicable Office of Independent Oversight protocols; guides; and criteria, review, and approach documents. The key protocol for HSS site leads is the *Office of Safety and Emergency Management Evaluations Protocol for Site Leads, May 2011*. HSS intends to conduct several future oversight activities at WTP specific to WTP safety culture improvement efforts associated with BNI, ORP, and DOE-WTP. Examples include:

- HSS plans to conduct a WTP safety culture progress assessment about 12 to 18 months from the issuance of the HSS WTP Safety Culture 2012 Report.
- HSS will remain engaged with the development, finalization and implementation of the corrective action plan to the HSS WTP Safety Culture 2012 Report by various operational awareness activities (attending briefings, meetings, and presentations, reviewing documents, conducting interviews and observing activities) as scheduled by the HSS WTP Site Lead.
- HSS will review and provide feedback on the adequacy of the corrective action plans.
- HSS plans to conduct a focused review on the adequacy of the WTP safety basis development and approval activities including the associated configuration control of the design changes with respect to the design basis events or accidents.
- As significant corrective actions are completed, HSS will selectively conduct on a priority basis independent oversight of the effectiveness of the implemented corrective actions and/or observe and/or shadow effectiveness assessments by other organizations.

HSS oversight activities will be documented by activity reports, independent review reports and assessment reports depending on the type of activity.



Department of Energy

Washington, DC 20585

JAN 30 2012

MEMORANDUM FOR GLENN PODONSKY
CHIEF, HEALTH, SAFETY AND SECURITY OFFICER
OFFICE OF HEALTH, SAFETY AND SECURITY

FROM:

 DAVID HUIZENGA
ACTING ASSISTANT SECRETARY FOR
ENVIRONMENTAL MANAGEMENT

SUBJECT: Independent Oversight Assessment of Nuclear Safety Culture
and Management of Nuclear Safety Concerns at the Hanford
Site Waste Treatment Immobilization Plant-January 2012

The Office of Environmental Management (EM) and the Office of River Protection (ORP) have reviewed the Office of Health, Safety and Security (HSS) Independent Oversight Assessment of Nuclear Safety Culture and Management of Nuclear Safety Concerns at the Hanford Site Waste Treatment and Immobilization Plant (WTP) and accept the recommendations in the report.

EM and ORP will take timely and appropriate action to address the findings and other deficiencies in the report that are directed at the Federal workforce, and will also assure that Bechtel National Incorporated (BNI) and its subcontractors develop and implement meaningful and responsive corrective actions to the contractor-related issues identified. As we develop our action plan we will compare the proposed actions to those already committed to in DOE's Implementation Plan for the Defense Nuclear Facilities Safety Board's Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant* and make changes as required.

In his response to Recommendation 2011-1, the Secretary stated: "The Department views nuclear safety and assuring a robust safety culture as essential to the success of the Waste Treatment and Immobilization Plant and all other projects across the DOE complex." Within DOE's Integrated Safety Management System, DOE defines safety culture as an organization's values and behaviors modeled by its leaders and internalized by its members, which serve to make safe performance of work the overriding priority to protect the workers, public, and the environment.

DOE recognizes that developing a robust safety culture will require management commitment, continuous communication and trust-building to nurture an environment where everyone feels free to raise safety, security or quality concerns without any fear of retribution and with the confidence to know that their concerns will be taken seriously.

It will take time to develop and implement corrective actions for many of the recommendations from the HSS review. However, there are other actions that can be



taken quickly. EM and ORP will take prompt action on a number of near-term items, including:

- Finalizing the WTP Project Execution Plan so that ORP is operating in accordance with an approved document that clearly defines roles and responsibilities for executing the WTP Project, including nuclear safety responsibilities and interfaces. (This action is in the Implementation Plan, scheduled for February 2012);
- Strengthening the employee concern program; and
- Strengthening the BNI differing professional opinion program.

While we have a significant amount of work that must be accomplished, many specific actions are already in progress or completed to promote a robust DOE safety culture. Some of these actions are summarized in the attachment.

Thank you again for the high degree of professionalism exhibited by HSS in conducting the assessment, and for the insightful recommendations. We look forward to your continued involvement and assistance in EM's efforts to improve the WTP safety culture.

If you have any further questions, please contact Mr. Matthew Moury, Deputy Assistant Secretary for the Office of Safety and Security Program, at (202) 586-5151.

Attachment

cc: S. Samuelson, ORP
T. Mustin, EM-2
A. Williams, EM-2.1
M. Moury, EM-20
J. Hutton, EM-20
K. Picha, EM-21

Attachment

Actions in Progress or Completed to Strengthen Safety Culture

- Establishing clear Department senior management expectations regarding safety culture;
- Revising the contract and associated performance measures for the WTP Project to support the Department's safety culture and safety management expectations;
- Impressing safety culture attributes and management behaviors through training for DOE and contractor senior leadership;
- Communicating safety culture lessons learned complex-wide via a comprehensive self-assessment, training, and other mechanisms; and
- Establishing processes and controls for sustainment of a robust safety culture throughout the DOE complex based on a comprehensive review of the results of the experience at WTP and the rest of the complex.