The Secretary of Energy
Washington, DC 20585

December 27, 2011

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

Dear Mr. Chairman:

Enclosed is the Department of Energy's (DOE's) Implementation Plan (IP) for Defense Nuclear Facilities Safety Board (Board) Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant* (WTP).

On June 30, 2011, the Department accepted Recommendation 2011-1 in a letter to the Board, which was published in the *Federal Register*. On August 12, 2011, the Board sought additional clarification about this acceptance, and on September 19, 2011, I transmitted clarification to the Board, which was also published in the *Federal Register*.

The IP provides DOE's approach to address the Board's three sub-recommendations contained in the Recommendation. The Department continues to address the Recommendation through concrete actions, including the current independent assessment of safety culture at WTP by DOE's Office of Health, Safety and Security (HSS). With regards to the HSS assessment, the IP Response Team has been in contact with the HSS staff to stay apprised of their work and reflect relevant information in the IP. Upon the assessment's release, the Department will review any HSS recommendations and respond appropriately.

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. In the course of executing the IP, information may be developed, for example, from independent reviews or self-assessments, which lead the Department to take additional actions. DOE will continue to be responsive and will act appropriately if additional information is identified that requires attention.

As you know, because this issue is of such great importance to the Department, I have designated Deputy Secretary Poneman as the Responsible Manager for this Recommendation, and he is continuing our efforts to address the Recommendation.

Sincerely,

Steven Chu

Enclosure

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U. S. Department of Energy

Implementation Plan
for
Defense Nuclear Facilities Safety Board
Recommendation 2011-1

Safety Culture at the Waste Treatment and Immobilization Plant

Washington, DC 20585

December 2011

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1.0 PURPOSE

The purpose of this Implementation Plan (IP) is to specify Department of Energy (DOE) actions for addressing Defense Nuclear Facilities Safety Board (Board or DNFSB) Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant.* The Waste Treatment and Immobilization Plant (WTP) is a major nuclear construction project located at the Hanford Site. The point of the IP is on improvement; as a result, the document focuses on addressing challenges and corrective actions, rather than positive news at WTP.

2.0 BACKGROUND

The Board issued Recommendation 2011-1 on June 9, 2011, which identified three specific sub-recommendations:

1. Assert federal control at the highest level and direct, track, and validate the specific corrective actions to be taken to establish a strong safety culture within the WTP Project consistent with DOE Policy 420.1 in both the contractor and federal workforces.

2. Conduct an Extent of Condition Review to determine whether these safety culture weaknesses are limited to the WTP Project.

3. Conduct a non-adversarial review of Dr. Tamosaitis' removal and his current treatment by both DOE and contractor management and how that is affecting the safety culture at WTP.

2.1 June 30, 2011, DOE Acceptance Letter on Recommendation 2011-1

On June 30, 2011, the Secretary of Energy sent the Board a letter acknowledging receipt of Recommendation 2011-1 and accepting the Recommendation. The letter stated that "DOE views nuclear safety and assuring a robust safety culture as essential to the success of the Waste Treatment and Immobilization Plant (WTP) and all of our projects across the DOE complex." The letter described DOE's initial steps to address the Board's recommendations, including:

- continued involvement of the Secretary and Deputy Secretary to assure specific actions to strengthen safety culture at WTP are tracked and validated;
- "town hall" style meetings across the DOE complex, where DOE senior managers will meet with employees to emphasize the importance of maintaining strong safety cultures and solicit employee input;
- an independent review of safety culture across the complex, to be conducted by the Office of Health, Safety and Security (HSS);
- Safety Conscious Work Environment (SCWE) training for WTP and Office of River Protection (ORP) managers and supervisors;

- an executive-level assessment of WTP safety culture, to be conducted by senior nuclear industry experts, sponsored by Bechtel National Incorporated (BNI);
- merging the Employee Concerns Programs (ECP) for the ORP and Richland Operations Office (RL) at Hanford to leverage their resources, strengthen the program, and increase its site-wide visibility;
- requiring EM Headquarters and field sites to assess safety culture and SCWE implementation in their annual Integrated Safety Management System (ISMS) declarations; and
- fully cooperating with the Department of Labor in its investigation of alleged retaliation issues raised by Dr. Tomasaitis.

Subsequent to the Secretary's acceptance of Recommendation 2011-1, DOE and Board staff met to discuss the Secretary's letter and assure DOE adequately understands the intent of the three sub-recommendations. The meetings were productive and helped DOE to better understand the Board's perspective and intent.

2.2 August 12, 2011, DNFSB Letter on 2011-1

On August 12, 2011, the DNFSB sent a letter to the Secretary of Energy acknowledging DOE's June 30 response to Recommendation 2011-1 and providing more information relevant to Recommendation 2011-1 to assist the Department in interpreting the basis and context for the Recommendation. The DNFSB letter extended the deadline to September 19, 2011, for DOE acceptance or rejection of Recommendation 2011-1.

The August 12, 2011, letter also further discussed sub-recommendation 3 and stated "The Board is convinced that DOE would learn meaningful lessons for improving the safety culture of the WTP project if it reviewed the effects that the circumstances of Dr. Tomasaitis' removal from the WTP project and his current treatment are having on the safety culture at WTP."

The letter requested that DOE clarify four areas:

- "DOE's present assessment of the safety culture at WTP in light of the additional sources of information now available to you;
- DOE's current understanding of the conclusions of the HSS report;
- DOE's present understanding and response to Sub-recommendation 3; and
- the independence, public stature, and leadership experience of the implementation team that will be called upon to provide safety culture insights and assessments to yourself and senior DOE leadership."

2.3 September 19, 2011, DOE Response to August 12, 2011, DNFSB Letter

On September 19, 2011, the Secretary responded to the Board's August 12, 2011, letter, reiterating the Department's acceptance of Recommendation 2011-1, as stated in its previous correspondence. The response contained clarifications of the four areas requested by the Board, summarized below.

- After reviewing public and worker comments and additional safety culture-related information, DOE confirmed it needs to continue to improve the WTP safety culture. The Department will also continue to evaluate applicable DOE and contractor policies and procedures, including procedures for resolving differing professional opinions and employee concerns.
- The Department "must continually update data and refresh conclusions" based on its findings. The Secretary directed HSS to do a follow-on safety culture review at WTP, in recognition of the need for further improvement. The review commenced in September 2011.
- DOE agreed that employee perceptions of a particular case can have a detrimental impact on safety culture. DOE will establish an improved WTP safety culture that "takes the power of perceptions fully into account."
- DOE agreed that safety culture insights and assessments from independent experts are useful and DOE will engage independent safety culture experts for individual feedback to evaluate this Implementation Plan and its major deliverables and provide their insights to senior DOE leadership.

3.0 UNDERLYING CAUSES

The Department's Response Team for Recommendation 2011-1 has evaluated the Recommendation and identified underlying causes it believes led to the findings and concerns stated in the Recommendation. In addition to the Recommendation, the Response Team reviewed: the eleven references identified in the enclosure to the Board's June 30, 2011, letter to the Secretary, the public comments posted to the Board's website, contract incentives for WTP design and construction, the 2010 HSS Independent Review of the Nuclear Safety Culture at the Hanford Waste Treatment and Immobilization Plant (WTP) and the other documents listed in the Reference section of this IP and in the charter of the Recommendation 2011-1 Response Team (attached).

Additionally, the Response Team Technical Lead and the Chief of Nuclear Safety met twice with and interviewed selected personnel that had expressed technical safety concerns regarding the WTP project. The Response Team compared this new information, and insights gained from this new information and review of these documents, to information from the DOE/Energy Facility Contractors Group (EFCOG) Safety Culture Task Team regarding safety culture and ISM, the Nuclear Regulatory Commission (NRC) Final Safety Culture Policy Statement, and information available from the Institute of Nuclear Power Operations (INPO) regarding nuclear safety culture attributes. Based on this information, the Response Team used a collaborative process to identify and understand the underlying causes.

The Response Team's review found that some technical staff at WTP hesitate to raise safety or technical concerns that might affect project schedule or cost, believing their managers may not support them or they find the resolution process is too difficult or too lengthy. Some staff also believe the Employee Concerns Program (ECP) is ineffective and believe management actions in implementing the ECP have reduced its value and credibility. These observations indicate weaknesses in SCWE related to management

behaviors regarding raising technical issues and to deficiencies in the issues resolution process. Sections 3.1 through 3.4 describe each of the detailed underlying causes hindering the implementation of a robust safety culture at WTP, as identified by the Response Team.

3.1 Departmental Expectations for Implementation of the Safety Culture Concept at Nuclear Facilities were not developed.

A strong safety culture is expected by the DOE's Nuclear Safety Policy (DOE P 420.1) and Integrated Safety Management Policy (DOE P 450.4A). However, there is a need for better implementation and dissemination of the safety culture concept. In other words, there is a need to do a better job of converting high level policy expectations for a strong safety culture into detailed guidance for implementation of those expectations. The Department recognizes that there is a need to communicate through both formal and informal processes. For example, the Response Team observed that the results of the work performed by the DOE/EFCOG Task Team, discussed in Section 4.2 of this plan, were communicated via memoranda from the EFCOG Chair (to contractors) and from the Deputy Secretary (to DOE managers and staff) rather than communicating safety culture guidance by more direct and formal means, such as through the DOE Directives System or Acquisition Letters. We need to make sure that our expectations on safety culture AND the actions and responses to concerns or complaints are communicated back to the originator and, where appropriate, across the complex through both formal and informal means.

The Department's Worker Safety Rule, 10 CFR Part 851 *Worker Safety and Health Program*, issued in 2006, requires contractors to "Establish procedures for workers to report, without reprisal, job-related fatalities, injuries, illnesses, incidents, and hazards and make recommendations about appropriate ways to control those hazards." (§ 851.20(a)(6)). In addition, DOE's ECP, as defined in DOE O 442.1A, *Department of Energy Employee Concerns Program*, encompasses "free and open expression of employee concerns" and "management's intolerance for reprisals against or intimidation of employees who reported concerns". That employees have not only the right to raise concerns, but also the responsibility to raise concerns, and that they can do so without fear of retaliation, is a message that DOE and its contractors must constantly reinforce. DOE did not develop expectations that emphasize reinforcement of that message.

(Actions 1-1, 2-1, 2-4, 2-10)

3.2 DOE and Contractor Management did not adequately mitigate the unintended impact on SCWE that occurred as the WTP Project shifted from the research and design phase to a phase more focused on construction and commissioning.

The WTP contract was awarded in 2001 as a concurrent design-build contract. This decision was made, in part, because of the Department's understandable desire to begin treatment of radioactive waste in the Hanford Tank Farms as early as practicable. Over time, the challenges associated with resolving and closing the research and technology

issues associated with this complex, first-of-a kind nuclear waste treatment facility have narrowed the time gap between design completion and procurement and construction activities needed to maintain the project's construction schedule. This convergence of the design completion and the procurement/construction schedules is manageable, but it inherently creates additional complexity and tension between organizational elements assigned to resolve technical issues and elements responsible for schedule and cost goals. This tension contributed to management behaviors detrimental to a SCWE, thus the WTP contracting strategy had an impact on the WTP safety culture. The Response Team observed that DOE and Contractor management did not sufficiently mitigate unintended impacts on SCWE that occurred as the WTP Project shifted from the research and design phase to a phase more focused on construction and commissioning.

One of the ISMS Guiding Principles stated in DOE P 450.4A, *Integrated Safety Management Policy* is "Balanced Priorities." The contract for any project effectively sets priorities, and the contract incentives are intended to motivate the contractor in executing the contract. The Response Team observed that the WTP contract incentivizes cost and schedule performance and project milestones. Performance measures reported to Headquarters and contract performance incentives are focused on cost and schedule performance and do not do enough to reinforce the safety culture concept by balancing these goals with emphasis aimed at sound, timely resolution of technical and safety-related issues. The Response Team observed that BNI management introduced some terminology ("knot hole process") that may have had the effect of discouraging individuals from raising technical safety issues that could affect cost and schedule. The need for better performance measures is partially related to DOE not having developed sufficient expectations for implementation of the safety culture concept, as discussed in Section 3.1.

(Actions 1-1, 2-1, 1-3, 1-5, 1-6, 1-7, 1-8, 2-3, 2-5, 2-12)

3.3 DOE and Contractor Management Require More Knowledge and Awareness of Safety Culture

Some managers need more knowledge and awareness of the overall topic of safety culture to support its effective implementation, such as knowledge of safety culture principles and awareness of good safety culture practices. Managers must have this knowledge and understanding of safety culture in order to exhibit management behaviors necessary for sustaining a SCWE. They must thoroughly understand and value elements such as the Differing Professional Opinion process, the Employee Concerns Program, and treatment of staff who raise issues and concerns. The Response Team observed that a module on Safety Culture at the Department's Nuclear Executive Leadership Training (NELT) is required for federal managers who will be delegated safety authorities and that the Senior Technical Safety Manager (STSM) Overview class sponsored by DOE's National Training Center includes a brief section on safety culture but does not provide the working level of knowledge of safety culture required for STSMs. Other federal and contractor managers generally are not required to have specific training on management roles and responsibilities for safety culture attributes, behaviors, and expectations. The

Response Team observed that managers' performance plans do not always include specific measures for meeting safety culture expectations. As a result, the opportunity to use this mechanism to emphasize safety culture as a way of doing business and hold managers accountable for developing and maintaining a SCWE has not been realized.

(Actions 1-1, 2-1, 1-3, 1-5, 1-6, 1-7, 1-8, 2-3, 2-5, 2-10, 2-12)

3.4 Technical Issue Resolution and Communication of Results at WTP are sometimes inefficient or ineffective

In interviews, discussions with project personnel, reviews of the documents referenced in this IP, and in public comments posted on the Board website, the Response Team found three areas in which the WTP issues resolution process needs improvement. First, some personnel perceived pressure from managers not to submit issues to the WTP issues resolution process. Second, after issues were submitted, the WTP issues resolution process sometimes takes too long to disposition such technical issues. Internal and external reviews of WTP identified delays in issue resolution as a weakness. Finally, after issues were resolved, managers did not always effectively communicate the decisions and their bases to the technical staff.

(Actions 1-1, 2-1, 1-3, 1-5, 1-6, 1-7, 1-8, 2-3, 2-5, 2-12)

3.5 Summary

The Department identified the four underlying causes listed above and has begun resolving them as described in this IP. All the actions in section 5 of this IP are required to fully address the recommendation; the individual actions should not be viewed in isolation or as independent of one another. Taken together, the actions in section 5 of this IP address the issues raised in the Recommendation at the fundamental systemic level, and seek to effect a lasting and sustainable strong safety culture at DOE defense nuclear facilities. In the course of executing the IP, information may be developed, for example, from independent reviews or self-assessments, that causes the Department to take additional actions. DOE will continue to be responsive and will act quickly if information is identified that requires prompt attention. DOE agrees that it can and will take strong efforts to improve safety culture on a continuing basis at WTP, both to address areas that require attention, and because continuous improvement is at the core of a viable safety culture. The underlying causes discussed above combined to negatively impact the safety culture at WTP, particularly in SCWE. Corrective actions which focus on the underlying causes are discussed in section 5.

4.0 NEAR-TERM ACTIONS AND RELATED ACTIVITES

4.1 Near-term Actions

From mid-2010 to the present time, DOE and BNI initiated a number of activities aimed at improving safety culture at WTP. Activities already initiated directly support sub-

recommendations 1 and 3; DOE is coordinating and integrating the results of these activities, described below, with the Recommendation 2011-1 IP. The near-term actions and related activities are not relied on to address the Recommendation in lieu of actions in section 5 of this IP.

In October 2010, HSS completed a review of safety culture at WTP and found areas needing improvement and immediate action. BNI stated that it completed corrective actions resulting from the HSS review in September 2011. As stated in the Secretary's September 19, 2011, letter, HSS commenced an independent assessment at WTP and ORP in September 2011, to evaluate the adequacy of corrective actions and to determine if WTP employees, both federal and contractor, feel free to raise safety concerns. Employees need to know that their concerns are taken seriously, both in terms of management's responsiveness to the issues raised and the ability to raise them without fear of retaliation regardless of cost and schedule pressures. The independent assessment will provide insight into whether the underlying cause related to the impact of WTP transition from design to construction has been addressed. The HSS independent assessment partially addresses sub-recommendations 1 and 3, and is further described in section 5.1 of this IP.

BNI issued a Nuclear Safety and Quality Culture (NSQC) plan in October 2010 and revised the NSQC plan in January 2011 to respond to the HSS review. In March 2011, BNI completed an assessment of the WTP safety culture to determine whether NSQC gaps existed at the site and to identify additional areas for improvement. As a result of the gap assessment BNI assigned a retired Navy Admiral and former nuclear utility executive, experienced in commercial nuclear plant safety assessment methods, as the Manager of NSQC implementation for the project. BNI subsequently revised the NSQC plan again in August 2011. The plan includes activities (discussed below) intended by BNI to respond to the weaknesses discussed in the underlying causes which can be addressed by the contractor.

To date, approximately 1,600 contractor personnel at the site, including all senior managers, have received training focused on making the workforce comfortable with raising issues and systematically moving issues to resolution. In July and August 2011, BNI hired a training contractor extensively used by the nuclear power industry to deliver SCWE training to 320 contractor managers. In addition, since May 2010 BNI conducted three all-hands meetings, with DOE project team participation, to emphasize the importance of a robust nuclear safety culture. These actions were taken to address the underlying cause related to insufficient knowledge and awareness (Section 3.3).

DOE is revising the WTP Project Execution Plan (PEP) to more clearly delineate federal roles, organizational responsibilities and interfaces at WTP and the ORP so that the WTP Project reporting relationship is consistent with other EM major acquisition projects. This action is included in section 5.1 as part of the response to sub-recommendation 1. This action partially addresses the underlying causes related to insufficiently clear and specific expectations and the ineffective communication of issues at WTP (Sections 3.1and 3.4).

EM provided guidance for EM Headquarters and field sites to use in self-assessing safety culture as part of the Fiscal Year 2011 annual ISMS/QA declaration. The guidance directed use of the structure of the EFCOG/DOE ISMS Safety Culture Focus Areas and Attributes, and included specific lines of inquiry for evaluating SCWE. This action partially addresses the underlying causes related to insufficiently clear and specific expectations and insufficient knowledge and awareness (Sections 3.1 and 3.3). EM enhanced alternative reporting mechanisms for safety-related concerns at both the site and program office level. At the Hanford site, EM combined the ECP for ORP and the Richland Operations Office to leverage existing resources, strengthening this important program, and increasing its visibility at the site. These actions partially address the underlying cause related to ineffective communication of issues (Section 3.4).

EM has made it easier for employees to use a variety of avenues to raise concerns, including the line management for each project, site ECPs, union representatives, EM's Office of Safety and Security Program, HSS, and Chief of Nuclear Safety. Both EM's Office of Safety and Security Program and the Chief of Nuclear Safety now offer employees access to both a hotline number and general email inbox, so that workers have the opportunity to ask questions or voice concerns either directly or anonymously. These actions partially address the underlying cause related to ineffective communication of issues (Section 3.4).

In July 2011, the Deputy Secretary hosted a "town hall" style meeting at WTP and emphasized the Department's commitment to safety and safety culture improvement at WTP and across the complex. During his trip he also met with smaller groups of employees to understand their concerns. This action partially addresses the underlying cause related to insufficiently clear and specific expectations (Section 3.1).

BNI sponsored an external executive level assessment of the WTP project's safety culture by highly respected nuclear industry experts with experience in commercial nuclear plant evaluations and/or NRC inspections. The assessment was completed in November 2011. BNI has transmitted the report of the external assessment to the Board and the Department. The Department is independently reviewing the assessment report for relevant findings.

4.2 Related Activity

In 2008, DOE began working with EFCOG on a jointly sponsored safety culture task. The task evaluated lessons learned from similar initiatives of the: INPO, NRC, National Aeronautics and Space Administration (NASA), Occupational Safety and Health Administration (OSHA), and International Atomic Energy Agency (IAEA). The primary result was the identification of three Safety Culture Focus Areas and Associated Attributes that the DOE/EFCOG Team considered to offer the most impact on improving ISMS implementation, safety, and production performance within the DOE complex. The focus areas are Leadership, Employee/Worker Engagement, and Organizational Learning. In 2009, seven DOE sites volunteered to pilot the EFCOG safety culture

model for one year. The task team incorporated lessons-learned from the pilots in final recommendations for DOE contractors to consider as they implement and assess safety culture. The task team prepared guidance on assessing safety culture in addition to the Focus Areas and attributes. The team issued its final report in June 2010. The Department is using the DOE/EFCOG products to support this IP, specifically in development of the recently issued DOE Integrated Safety Management System Guide and in developing guidance for extent of condition reviews which are described in detail in Section 5, partially addressing the underlying cause related to insufficiently clear and specific expectations (Section 3.1).

5.0 ISSUE RESOLUTION

Building, reinforcing and sustaining a strong safety culture at WTP and other DOE sites with defense nuclear facilities requires: engagement by senior DOE officials; DOE-wide formal transmittal of expectations, guidance, and training on safety culture; employee input and participation; self assessment; independent oversight by HSS; use of individual and contractual performance mechanisms to strengthen accountability for implementation of safety culture principles; and an open and transparent process to identify technical issues and implement corrective actions. DOE understands the value and perspective provided by independent review and feedback; therefore, as discussed in the Secretary's September 19, 2011, letter, DOE will engage independent industry safety culture experts for individual feedback to evaluate the IP and also to evaluate the quality of major IP deliverables.

The Department agrees with the Board that "federal and contract managers must make a special effort to foster a free and open atmosphere in which all competent opinions are judged on their technical merit, to sustain or improve worker and public safety first and foremost, and then evaluate potential impacts of cost and schedule." These expectations are articulated clearly in DOE Order 442.2, *Differing Professional Opinions for Technical Issues Involving Environment, Safety, and Health*, and DOE Order 442.1A, *Department of Energy Employee Concerns Program.*

The Department's approach to address the Board's three sub-recommendations is described below:

5.1 Sub-Recommendation 1 - Assert federal control at the highest level and direct, track, and validate the specific corrective actions to be taken to establish a strong safety culture within the WTP project consistent with DOE Policy 420.1 in both the contractor and federal workforces.

Issue Description

The DNFSB Recommendation 2011-1, HSS independent review of Nuclear Safety Culture at WTP, EM and ORP line management oversight, and self assessments of safety culture at WTP performed by BNI and its consultants, have all identified the need to address aspects of the safety culture, including SCWE, at the WTP project. In the June

30, 2011, DOE response to the DNFSB recommendation, the Secretary of Energy agreed with the Board that "federal and contract managers must make a special effort to foster a free and open atmosphere in which all competent opinions are judged on their technical merit, to sustain worker and public safety first and foremost, and then [to] evaluate potential impacts of cost and schedule."

When the DNFSB issued its recommendation, the WTP contractor had already initiated a number of actions in its Nuclear Safety and Quality Culture Plan. The Secretary committed to further actions in his response to Recommendation 2011-1 and through the development of this Implementation Plan.

Resolution Approach

The Department of Energy will provide additional federal control at the highest level to direct, track and validate the specific corrective actions in this plan to improve the safety culture at the WTP project.

The Secretary of Energy designated the Deputy Secretary (S-2) as the Responsible Manager for Recommendation 2011-1. The Deputy Secretary approved this plan which provides direction to the Department's efforts, and will track progress and assure effective completion and validation of actions listed herein. The Deputy Secretary will review status on IP actions through periodic (approximately bi-monthly) reports and regular briefings from the 2011-1 Response Team Technical Lead. Individual actions in this IP are managed by several DOE executives, as stated in the "Lead" part of action descriptions. The Deputy Secretary holds them accountable for completion of actions and deliverables. He will evaluate whether actions have been satisfactorily completed, make the Department's determination on DOE closure of actions and recommend closure of the IP to the Secretary. The Undersecretary for Nuclear Security will manage and implement these initiatives at WTP and throughout the EM and NNSA defense nuclear facilities.

The following objectives form the basis for "assertion of federal control at the highest level":

- The Secretary will set departmental expectations for establishing a strong safety culture and federal and contractor safety culture training.
- The Deputy Secretary will direct performance, evaluate intermediate deliverables and confirm the adequacy of actions taken at all levels within the Department and its contractors.
- The Under Secretary for Nuclear Security will manage and implement these initiatives at WTP and throughout the EM and NNSA defense nuclear facilities.

Throughout the execution of this IP, the Department's senior leadership is committed to a sustained effort monitoring progress and pushing the entire complex to meet and exceed the goals laid out herein and in other Departmental safety guidance documents.

5.1.1 Safety Culture Expectations and Training

To accomplish these objectives the Secretary will set clear and specific DOE-wide expectations for safety culture, including safety culture training, and the Deputy Secretary will continue to be personally engaged in asserting federal control to assure the specific corrective actions to build and strengthen safety culture within the WTP Project, in both contractor and federal workforces, are tracked, completed and validated. Actions will reinforce the essential roles of DOE and the WTP contractor as leading advocates of safety and public trust and demonstrate commitment in both word and deed. The Secretary will communicate WTP safety culture expectations to the Undersecretary for Nuclear Security and the Secretary will reiterate his expectations as the keynote speaker at a WTP town hall meeting. The Secretary will also participate in additional meetings with WTP employees while at Hanford to discuss safety culture and listen to employee feedback. These activities are summarized in Action 1-1 for WTP and Action 2-1 for DOE defense nuclear facilities.

5.1.2 HSS Assessment of Safety Culture at WTP

As stated in section 4.1, HSS is conducting an independent assessment of Safety Culture at WTP. The HSS 2011 independent safety culture assessment will provide a current assessment of safety culture at the WTP. HSS will evaluate the effectiveness of the ECP and the Differing Professional Opinion (DPO) process in its independent assessment of current WTP safety culture, including whether management directions and engagement assure these programs are successful in resolving concerns. The HSS 2011 independent safety culture assessment scope includes WTP Federal and contractor organizations and the Department's Office of River Protection. The HSS 2011 independent safety culture assessment will evaluate the adequacy of actions taken by ORP and BNI in response to the October 2010 HSS assessment of WTP safety culture. The previous assessment found weaknesses in elements of a SCWE directly related to a chilled work environment. The Board expressed concerns about the conduct of the October 2010 HSS review. HSS evaluated its assessment processes in light of the Board's concerns and in support of continuous improvement, and it enhanced training, methods, and expertise to support the 2011 assessment. Prior to initiating the 2011 assessment, HSS enhanced its safety culture assessment processes and capability. HSS consulted with the Nuclear Regulatory Commission staff, several nuclear power generating utilities, and associated support organizations, to benchmark their processes. HSS then obtained the support of a psychologist specializing in human performance analysis with extensive experienced in both the development and application of safety culture assessment methodology utilized by commercial nuclear and other industry. A methodology was selected for the 2011 assessment that provides an objective and systematic measurement of the organizational behaviors that impact safety performance using multiple data collection tools to assess organizational behaviors. These tools include functional analysis, semi-structured focus groups and interviews, observations, behavioral anchored rating scales, and a safety culture survey of Federal personnel. The HSS staff was trained on application of the data collection techniques with supplemental training on the conduct of focus groups. HSS will assess whether the perceptions surrounding the particular case had and/or continue to

have a chilling effect on WTP safety culture, thus partially addressing sub-recommendation 3. These activities are summarized in Action 1-2.

5.1.3 BNI Ongoing Safety Culture Oversight

BNI will also implement an ongoing Safety Culture oversight process at WTP which will include a SCWE element. This process has been incorporated into a procedure, and EM and the Chief of Nuclear Safety will conduct oversight of the process implementation, including procedures for resolving differing professional opinions and other employee concerns. These activities are summarized in Action 1-3.

5.1.4 Formal Direction on Safety Culture

The ORP will give formal direction to BNI regarding the expectations to improve safety culture, thus continuing to assert stronger federal control over the contractor's corrective actions. The NSQC plan prepared by BNI integrates responses to the October 2010 HSS assessment with other planned improvements to safety culture and is a logical place for BNI to incorporate actions resulting from the ORP direction. As discussed above in section 4.1, BNI sponsored an external assessment of the WTP nuclear safety culture. ORP will specifically direct BNI to amend the NSQC plan to assure it responds to issues from the 2011 HSS assessment, and relevant issues from the external assessment sponsored by BNI. The ORP will revise the BNI contract performance evaluation plan and project performance measures to achieve balanced priorities and include safety culture elements. The contract performance evaluation plan and performance measures will be revised to coincide with the award fee period under the BNI WTP contract. ORP will also review the BNI WTP contract and implement appropriate mechanisms to achieve balanced priorities and include safety culture elements. If changes to the contract fee structure are proposed, this will require negotiation. ORP will formally notify BNI that the ORP will validate completion and effectiveness of actions in the NSQC plan. Finally, EM will revise the Project Execution Plan for WTP to be consistent with other EM major acquisition projects. The revision to the WTP Project Execution Plan will address the 2010 HSS recommendation for the ORP by describing roles and responsibilities within the WTP Project organization and supporting elements from the ORP and the Richland Operations Office (RL). The Project Execution Plan also describes major interfaces between the federal project organization, contractors, regulators, and external oversight groups, as recommended by HSS. These activities are summarized in Actions 1-4, 1-5, 1-6, 1-7, and 1-9.

5.1.5 ORP Formal Response to HSS Assessment

The ORP will prepare an action plan formally documenting its responses to the HSS 2011 assessment recommendations for ORP. Responses will include federal actions to improve accountability for a strong WTP safety culture, such as changes to management and employee performance plans. ORP will solicit involvement of federal employees and their union representatives in preparing the action plan. These activities are summarized in Action 1-8.

Deliverables/Milestones

Objective 1: The Secretary will set departmental expectations for establishing a strong safety culture.

Action 1-1: The Secretary of Energy will formally communicate his expectations to the Undersecretary for Nuclear Security regarding safety culture at the WTP and will reiterate his expectations as the keynote speaker at a WTP town hall meeting and in other meetings with WTP employees.

Deliverable: Letter to DNFSB communicating completion and transmitting the formal communication and forwarding the transcript of the Secretary's speech.
Expected Completion Date: June 2012
Lead: S-1

Objective 2: The Deputy Secretary will manage performance through intermediate evaluation and final confirmation of actions taken at all levels within the Department and its contractors, and the Deputy Secretary will work with the rest of DOE senior leadership to promote responsiveness to feedback throughout the complex.

Objective 3: The Under Secretary for Nuclear Security will manage and implement these initiatives to promote the Department's commitment to a strong and responsive safety culture at WTP and throughout the EM and NNSA defense nuclear facilities.

Action 1-2: HSS will conduct an assessment at WTP that evaluates the current status in establishing a SCWE, and whether perceptions surrounding the particular case could be affecting SCWE, as well as the adequacy of the effectiveness of actions implemented in response to the 2010 HSS review of safety culture.

Deliverable: Letter to DNFSB communicating completion and transmitting the assessment report.
Expected Completion Date: February 2012
Lead: HSS

Action 1-3: Implement an ongoing safety culture oversight process at WTP.

Deliverable: Letter to DNFSB communicating implementation of the BNI safety culture oversight process and providing a description of the process and federal oversight of the process.
Expected Completion Date: January 2012
Lead: EM

Action 1-4: Direct BNI to amend the NSQC plan to include responses to the executive level assessment and to issues from the 2011 HSS assessment.

Deliverable: Letter to DNFSB transmitting the letter of direction to BNI.
Expected Completion Date: February 2012

Lead: EM

Action 1-5: Revise the BNI contract performance evaluation plan and performance measures for WTP project reviews to achieve balanced priorities and include safety culture elements.

Deliverable: Letter to DNFSB communicating completion that includes the contract performance evaluation plan changes and performance measure changes.
Expected Completion Date: July 2012
Lead: ORP/EM

Action 1-6: Review the BNI WTP contract and implement appropriate mechanisms to achieve balanced priorities and include safety culture elements.

Deliverable: Letter to DNFSB communicating completion that documents the contract review and any contract changes made to address balanced priorities and include safety culture elements.
Expected Completion Date: July 2013
Lead: ORP/EM

Action 1-7: Revise the WTP Project Execution Plan (PEP) to more clearly delineate federal roles, organizational responsibilities and interfaces at WTP and ORP so that the WTP Project reporting relationship is consistent with other EM major acquisition projects.

Deliverable: Letter to DNFSB transmitting revised PEP.
Expected Completion Date: February 2012
Lead: EM

Action 1-8: Develop an action plan and complete ORP actions for safety culture improvements including responses to HSS recommendations made to ORP and changes to management and employee performance plans that include specific measures for meeting safety culture expectations.

Deliverable 1: Letter to DNFSB transmitting action plan.
Expected Completion Date: April 2012
Deliverable 2: Letter to DNFSB communicating completion of the action plan.
Expected Completion Date: April 2013
Lead: ORP/EM

Action 1-9: Conduct a validation and effectiveness review of ORP and BNI actions, including the WTP safety culture management process, and other actions contained in the BNI NSQC plan.

Deliverable: Letter to DNFSB communicating completion and transmitting report of validation and effectiveness review.
Expected Completion Date: May 2013
Lead: EM

5.2 Sub-Recommendation 2 - Conduct an Extent of Condition Review to determine whether these safety culture weaknesses are limited to the WTP Project.

Issue Description

The DNFSB documented its concerns that the safety culture at WTP does not encourage raising technical nuclear safety issues and WTP has a flawed SCWE. DOE needs to assure that cost and schedule pressures are not overriding or delaying reporting and resolution of safety issues at other sites. The October 2010 HSS assessment identified that WTP has some workers who believe a chilled work environment exists which discourages reporting safety concerns and makes some workers fearful of retaliation for reporting safety issues. Similar issues may exist at other DOE defense nuclear facility sites.

Resolution Approach

DOE will conduct an Extent of Condition Review to find out whether similar safety culture weaknesses exist at other sites in addition to the WTP and whether there are barriers to strong safety culture at Headquarters and the Department as a whole (e.g., policies or implementation issues). The review will focus on the Safety Conscious Work Environment (SCWE) at each site examined. A SCWE is an important subset of a safety culture that emphasizes the willingness of employees to identify and raise safety concerns without fear of retaliation. The safety culture issues identified at WTP are primarily SCWE issues and they are associated with technical groups and project management for a large nuclear project; therefore the actions discussed in this section are aimed at determining if similar conditions exist for other sites with defense nuclear facilities or construction projects.

Based on outcomes of the SCWE evaluations, the review at individual sites may be expanded to address other safety culture elements. DOE is committed to fostering an environment where its contractor and federal workforces feel free to raise safety issues without threat or fear of retaliation and with the expectation that those issues will be addressed in a professional and open manner. DOE will conduct the Extent of Condition review in five parts:

> Part 1, Issue the Secretary's Expectations for Nuclear Safety to the Department: The Secretary's expectations will reinforce the clear and specific safety culture attributes in the Department's ISMS Guide.
>
> Part 2, Defense Nuclear Facility-related SCWE Self-assessments: Program offices with defense nuclear facilities will perform self-assessments at Headquarters and site/field offices of both federal and contractor organizations to evaluate SCWE attributes/elements (e.g., management behaviors, programs, processes, contract incentives, and performance measures that may have contributed to safety culture deficiencies at WTP). The DOE Office of Engineering and Construction Management (OECM) also will conduct a self-

assessment since it has a significant role as DOE's independent reviewer of projects at critical milestone points. The self-assessments are further discussed in section 5.2.2 of this IP. The self-assessments are an assessment activity aimed at engaging Line Management in the process of managing safety culture, and finding indicators of safety culture deficiencies indicating a need for further, more in-depth assessments, as discussed in Part 4.

Part 3, Independent HSS Reviews: HSS will independently review selected defense nuclear construction projects and develop and implement an independent oversight plan for the program office self-assessments. HSS will use expertise from outside DOE to assist in planning and conducting the independent reviews of projects. The HSS independent reviews are further discussed in section 5.2.2 of this IP.

Part 4, Consolidated DOE Report on SCWE: When the self-assessment and independent review information is available, a cross-cutting team will consolidate the results and provide an evaluation indicating which organizations (sites, Headquarters offices, etc.) merit a more detailed safety culture assessment and identify any cross-cutting DOE issues the Department should address.

The cross-cutting team's consolidated report will document the assessment results, conclusions regarding Extent of Condition, and recommendations. This will include recommendations for ongoing management of safety culture at DOE defense nuclear facilities. The Department will manage actions resulting from the Extent of Condition review within its normal management systems such as ISM and issues management processes.

Part 5, Sustainment of a Robust Safety Culture: Following completion of Extent of Condition reviews and the DOE consolidated report on SCWE, the Department will assure sustainment of a robust safety culture at its defense nuclear facilities by having Program Secretarial Officers (PSO) direct their sites to develop processes and controls tailored to their unique conditions and circumstances. Sites will identify and use sustainment tools tailored to their unique circumstances. The DOE Chief of Nuclear Safety will concur with the sustainment tools chosen at each non-NNSA site, and the NNSA Chief of Defense Nuclear Safety will concur with the tools at each NNSA site.

5.2.1 The Secretary's Nuclear Safety expectations and revision of the DOE ISMS Guide

The Secretary distributed his expectations for Nuclear Safety to the Heads of all Departmental elements. As discussed in section 3.1, the Department's Response Team identified that the Department had not developed clear guidance for implementation of the safety culture concept. The Response Team worked with HSS to incorporate in the Department's new ISMS Guide clear and specific safety culture attributes that support implementation of the expectations for strong safety culture contained in the DOE P 450.4A, *Integrated Safety Management Policy*, and DOE P 420.1, *Department of Energy*

Nuclear Safety Policy. HSS derived the attributes from the DOE/EFCOG safety culture task discussed in Section 4.2 of this plan. Guidance for the self-assessments will be based on these attributes. Inclusion of the attributes in the Guide allows DOE to emphasize the nexus between ISM and safety culture. These attributes complement the policy information in DOE Policies 420.1 and 450.4A and assist DOE and its contractors in effective implementation of safety culture. The Secretary's expectations for Nuclear Safety at the Department of Energy reinforce the use of the ISMS Guide. The activity of distributing the Secretary's expectations for Nuclear Safety is summarized in Action 2-1.

5.2.2 Self-assessments and Independent Reviews

The extent-of-condition reviews will be conducted at contractor sites with defense nuclear facilities and/or construction projects and the federal offices with associated oversight responsibilities. These include site and field offices, project offices, Headquarters program offices, and OECM. HSS, as the Department's independent oversight organization, will oversee this self-assessment process.

The sites that will perform self-assessments are:

- NNSA Sites
  - Savannah River tritium operations/Savannah River Site Office,
  - Los Alamos National Laboratory/Los Alamos Site Office,
  - Sandia National Laboratories/Sandia Site Office,
  - Lawrence Livermore National Laboratory/Livermore Site Office,
  - Nevada National Security Site/Nevada Site Office,
  - Y-12 National Security Complex/Y-12 Site Office,
  - Pantex Plant/Pantex Site Office.
- EM Sites
  - Savannah River Site (except tritium operations)/Savannah River Operations Office,
  - Idaho Site (EM programs)/Idaho Operations Office,
  - Hanford Site/Richland Operations Office/Office of River Protection,
  - Waste Isolation Pilot Plant/Carlsbad Field Office,
  - East Tennessee Technology Park/Oak Ridge Operations Office.
- Science Site
  - Pacific Northwest National Laboratory (Radiochemical Processing Laboratory)/Pacific Northwest Site Office.
- Headquarters Offices
  - NA,
  - EM,
  - SC,
  - OECM .

The specific defense nuclear facility construction projects HSS will independently review include:

- Salt Waste Processing Facility (SWPF) at Savannah River
- Uranium Processing Facility (UPF) at Y-12
- Chemistry and Metallurgy Research Building Replacement (CMRR) at Los Alamos
- Waste Solidification Building (WSB) at Savannah River
- Sodium Bearing Waste Treatment Facility (SBWTF) at Idaho

The HSS independent reviews will use multiple assessment methodologies including functional analysis, semi-structured interviews and focus groups, observations, Behavior Anchored Rating Scales, and safety culture surveys. The scope will include both contractor and applicable DOE federal organizations.

The 2011-1 Response Team and DOE program offices will develop guidance for the self-assessments based on safety culture attributes in the ISMS Guide and key lessons learned from the ongoing HSS independent assessments that address SCWE. The scope of self-assessments at the sites listed will include defense nuclear construction projects not covered by the HSS independent reviews. The Response Team and DOE program offices will conduct training on use of the guidance for DOE and contractor employees participating in the self-assessments, as well as training for managers and supervisors that includes their special roles and responsibilities in nurturing a SCWE by such behaviors as listening to employees and not allowing safety issues to languish. DOE will use expertise available from the DOE/EFCOG safety culture task team discussed in section 4.2 to assist in developing the self-assessment guidance and training. The self-assessments and independent reviews will emphasize whether programs are in place in accordance with existing guidance and whether they are effective. Both the self-assessments and independent reviews will consider whether contract incentives and performance measures achieve balanced priorities and include safety culture elements. HSS will develop and execute a plan for independent oversight of the program office self-assessments.

In its independent reviews of projects, HSS will probe the issues associated with sub-recommendation 3 and assess whether the particular case at WTP had a chilling effect on the local safety culture at other projects. The self-assessments and HSS independent reviews of projects (as well as the 2011 HSS assessment of WTP discussed under sub-recommendation 1) will include a similar review of SCWE and associated processes such as the DPO process and ECP process. Activities related to the self-assessments are summarized in Actions 2-2 through 2-5. Activities related to the HSS independent reviews are summarized in Actions 2-6 and 2-7.

5.2.3 Consolidated DOE Report on SCWE

Under the guidance of the DOE Nuclear Safety and Security Council (NSSC), DOE will develop a consolidated report from the results of the self-assessments and HSS independent reviews. The NSSC is chaired by the Associate Deputy Secretary and includes senior level representatives from DOE program offices, HSS, General Counsel, and the Field Management Council. The Council addresses programmatic and technical safety and security issues with DOE-wide ramifications, and forwards proposed

resolutions to DOE's Chief Operating Officers Board and Operations Management Council for decisions. It works collaboratively to improve DOE's safety and security performance, supporting the approaches outlined in the DOE Strategic Plan. The NSSC charter is appended to this IP.

The NSSC will appoint a cross-cutting team to assess the results, establishing criteria that will help determine which organizations merit further, more in-depth SCWE reviews. In addition, the team will assess the data to determine if there are overall DOE issues, such as policy, directives/guidance, performance measurement, and training that suggest further action. The team's report will recommend actions for DOE management consideration; this will include necessary changes to training for the Department's STSMs. Activities related to the consolidated report are summarized in Actions 2-8 and 2-9.

5.2.4 Sustainment of a Robust Safety Culture

As discussed in the Secretary's June 30, 2011, letter to the DNFSB, DOE will hold town hall style meetings across the DOE defense nuclear facility complex, similar to the Deputy Secretary's June 2011 meetings at WTP, where DOE senior managers will meet with employees to emphasize the importance of maintaining strong safety cultures and solicit employee input. These meetings will be scheduled in 2012. DOE will notify the Board staff in advance of the meetings so Board members and/or staff have the opportunity to observe them.

After completion of the consolidated report, and reflecting the feedback received from the above town hall meetings, DOE will implement management processes and controls to assure sustainment of a robust safety culture at its defense nuclear facilities. The Deputy Secretary will direct DOE-wide implementation of applicable recommendations from the report; and PSOs will direct their sites to develop processes and controls tailored to their unique conditions and circumstances, and consistent with the Deputy Secretary's direction. The DOE Chief of Nuclear Safety will concur with the sustainment tools chosen at each EM site, the NNSA Chief of Defense Nuclear Safety will concur with the tools at each NNSA site, and the Office of Science Chief of Nuclear Safety will concur with the tools for the Science site.

Sustainment tools may consist of periodic self-assessments, periodic HSS independent reviews, reviews by outside experts, performance measures, continuing training, employee surveys, contract incentives, or other items. Each site will adopt the sustainment mechanisms it considers most beneficial to its situation provided they are consistent with the Deputy Secretary's direction and approved by the responsible PSO with concurrence by either the DOE Chief of Nuclear Safety, the NNSA Chief of Defense Nuclear Safety, or the Office of Science Chief of Nuclear Safety. The Department will close this implementation plan following the applicable concurrences and approvals for sustainment tools at its defense nuclear facilities. The responsible PSO's will provide the Board with approval memoranda and documentation of the sustainment tools at their respective sites. The Secretary will send a letter to the Board

documenting achievement of all PSO approvals for sites in their purview. Activities related to sustainment of a robust safety culture are summarized in Actions 2-10 through 2-13.

Deliverables/Milestones

Part 1: Revision of the DOE Integrated Safety Management System Guide

Action 2-1: Issue S-1's Nuclear Safety expectations to the Heads of all Departmental Elements which reinforces issuance of clear and specific safety culture attributes in DOE G 450.4-1C, Integrated Safety Management System Guide.

> Deliverable: Letter to DNFSB transmitting the Secretary's expectations for Nuclear Safety at the Department of Energy.
> Expected Completion Date: January 2012
> Lead: The Secretary

Part 2: Defense Nuclear Facility-related SCWE Self-assessments.

Action 2-2: Develop training on safety culture attributes for DOE and contractor key senior leadership.

> Deliverable: Letter to DNFSB transmitting training information.
> Expected Completion Date: July 2012
> Lead: 2011-1 Response Team

Action 2-3: Provide training on safety culture attributes and management behaviors for DOE and contractor key senior leadership and assign the appropriate line organizations to sponsor and conduct training for other employees.

> Deliverable: Letter to DNFSB discussing completion of training.
> Expected Completion Date: December 2012
> Lead: 2011-1 Response Team

Action 2-4: Prepare guidance (e.g. Lines of Inquiry and techniques), based on safety culture attributes in the ISMS Guide and key lessons learned from the ongoing HSS independent assessments, that address SCWE, for use in the self-assessments.

> Deliverable: Letter to DNFSB transmitting the guidance document
> Expected Completion Date: July 2012
> Lead: 2011-1 Response Team in conjunction with HSS

Action 2-5: Contractors and federal organizations complete SCWE self-assessments and provide reports to the appropriate Headquarters program office.

> Deliverable: Letters from PSOs to DNFSB transmitting individual self-assessment reports when all are completed.

Expected Completion Date: March 2013
Lead: Senior management at selected organizations.

Part 3: Independent HSS reviews

Action 2-6: Complete independent reviews of selected major DOE projects.

Deliverable: Letters to DNFSB transmitting individual reports as each site or project is reviewed.
Expected Completion Date: November 2012
Lead: HSS

Action 2-7: Develop and execute a plan for independent oversight of site self-assessments.

Deliverable: Letters to DNFSB transmitting the independent oversight plan and the results of independent oversight of the site self-assessments.
Expected Completion Date: April 2013
Lead: HSS

Part 4: Consolidated DOE report on SCWE

Action 2-8: Complete a consolidated report from the results in Parts 2 and 3.

Deliverable: Letter to DNFSB transmitting consolidated report on SCWE Extent of Condition reviews.
Expected Completion Date: May 2013
Responsibility: 2011-1 Response Team

Action 2-9: Based on the results in the consolidated report recommend ongoing safety culture management processes for use at DOE defense nuclear facilities.

Deliverable: Transmittal to DNFSB of Report to the Deputy Secretary recommending actions to be taken for ongoing safety culture management within the DOE defense nuclear facility complex.
Expected Completion Date: June 2013
Responsibility: DOE Nuclear Safety and Security Council.

Part 5: Sustainment of Safety Culture

Action 2-10: Conduct town hall style meetings across the DOE sites with defense nuclear facilities, where DOE senior managers will meet with employees to emphasize the importance of maintaining strong safety cultures and solicit employee input.

Deliverable: Letter to DNFSB communicating completion of the meetings.
Expected Completion Date: March 2013

Responsibility: PSO's

Action 2-11: Direct sites to develop processes and controls for sustainment of a robust safety culture.

Deliverable: Letter to DNFSB transmitting copies of PSO memoranda of direction to sites.
Expected Completion Date: July 2013
Lead: PSOs

Action 2-12: Submit proposed site-specific safety culture sustainment tools to PSOs for approval, including concurrence by DOE Chief of Nuclear Safety, NNSA Chief of Defense Nuclear Safety, or Office of Science Chief of Nuclear Safety.

Deliverable: Letter notifying DNFSB of submittal of all site proposals and transmitting copies of the proposals.
Expected Completion Date: September 2013
Lead: Site/Field Office Managers

Action 2-13: Complete review and PSO approval of site-specific safety culture sustainment tools.

Deliverable: Secretary of Energy letter to DNFSB transmitting approved site-specific safety culture sustainment tools for all defense nuclear facility sites.
Expected Completion Date: December 2013
Lead: PSOs/The Secretary

5.3 <u>Sub-Recommendation 3</u> - Conduct a non-adversarial review of Dr. Tamosaitis' removal and his current treatment by both DOE[1] and contractor management and how that is affecting the safety culture at WTP.

<u>Issue Description</u>

As stated by the Secretary in his September 19, 2011, letter, "DOE understands the distinction being made by the Board that there is a difference between judging the merits of a particular case between opposing parties still in dispute, and the effect that the perceptions of that controversy – regardless of the merits of the underlying case – may have on a community." As noted by the DNFSB in Recommendation 2011-1 and by HSS in its 2010 independent review of WTP nuclear safety culture, some individuals have lost confidence in management support for safety, believe there is a chilled environment that discourages reporting of safety concerns, and/or are concerned about retaliation for reporting safety concerns. HSS concluded that these concerns are not isolated and warrant timely management attention. Although the allegations were

[1] To be precise, at all relevant times, Dr. Tamosaitis has been a URS employee, not a DOE employee. He is in fact still employed by URS. DOE did not remove him from a position, nor is it "current[ly] treat[ing]" him in any way.

brought to the Department of Labor more than a year ago, perceptions of a chilled work environment may have had and may continue to have a detrimental effect on WTP safety culture.

Resolution Approach

A SCWE is an important subset of a safety culture that focuses on the willingness of employees to identify and raise safety concerns without fear of retaliation. Workers at WTP must feel comfortable raising safety or design issues, even if resolution could impact project cost or schedule.

In response to the October 2010 HSS assessment report, BNI issued an action plan intended to improve the WTP safety culture. The plan defined contractor actions intended to improve the SCWE as well as the overall WTP safety culture. The plan includes actions for 1) implementation of mechanisms to strengthen trust within the workforce and better communicate information such as decisions or actions on safety issues to employees, 2) adding feedback and improvement mechanisms to the NSQC plan, and 3) providing NSQC training to managers and staff.

The Department expects that effective implementation of the BNI and ORP actions will improve the SCWE at WTP. However, the particular case noted in sub-recommendation 3 may have a lingering impact at WTP. HSS will determine how this particular case is affecting current employee perceptions and safety culture at WTP. The 2011 HSS assessment, described under sub-recommendation 1, will assess whether DOE and contractor responses have improved the SCWE at WTP. HSS will assess whether the perceptions surrounding this particular case had and/or continue to have a chilling effect on WTP safety culture. The 2011 HSS assessment will neither examine nor opine on the merits of the allegations. The assessment report will discuss effects identified by HSS. The ORP will direct BNI to develop an action plan that addresses any weaknesses identified and submit the plan to HSS for concurrence.

Deliverables/Milestones

The actions needed to support the resolution approach already are included in Actions 1-2 and 1-4. These actions are listed below for reference.

Action 1-2: HSS will conduct an assessment at WTP that evaluates the current status in establishing a SCWE, and whether perceptions surrounding the particular case could be affecting SCWE, as well as the adequacy of the effectiveness of actions implemented in response to the 2010 HSS review of safety culture.

Deliverable: Letter to DNFSB communicating completion and transmitting the assessment report.
Expected Completion Date: February 2012
Lead: HSS

Action 1-4: Direct BNI to amend the NSQC plan to include responses to the executive level assessment and to issues from the 2011 HSS assessment.

Deliverable: Letter to DNFSB transmitting the letter of direction to BNI.
Expected Completion Date: February 2012
Lead: EM

6.0 SUMMARY

The actions described in this IP address the three sub-recommendations in DNFSB Recommendation 2011-1 systematically and efficiently. The IP is consistent with the Department's commitment to ISM and draws on the feedback and improvement core function. The Department's federal employees will assert control of the plan and its actions from initiation to closure and validation of effectiveness. The Department believes these actions are responsive and appropriate for implementing the overall intent of Board Recommendation 2011-1, eliminating the underlying causes of safety culture weaknesses at WTP, and improving safety culture at defense nuclear facilities elsewhere in the Department.

7.0 ORGANIZATION AND MANAGEMENT

The DOE Deputy Secretary is the Responsible Manager for the execution of this IP.

The EM Chief Nuclear Safety Advisor will direct the team responsible for developing the technical products committed to in the IP.

In addition to the specific responsibilities called out to them in this IP, the Deputy Secretary, the Under Secretary for Nuclear Security, and other senior DOE leadership will engage with the other Departmental elements executing this implementation plan to maintain the high commitment to safety culture expressed here and in other DOE safety guidance.

To assure the various Department implementing elements and the Board remain informed of the status of IP implementation, the Department will provide progress briefings to the Board and/or Board staff approximately every four months.

REFERENCES

Board Recommendation 2011-1, Safety Culture at the Waste Treatment and Immobilization Plant, dated 06/09/2011

Secretary's response to R2011-1, dated 06/30/2011

Board Letter to the Secretary, dated 06/30/2011, and enclosed list of references

Principles for a Strong Nuclear Safety Culture, INPO, 11/04

EFCOG/DOE ISMS Safety Culture Task Team Final Report, 06/04/2010

EFCOG Safety Culture Background – Linkage to ISM, 11/2008

EFCOG/DOE Assessing Safety Culture in DOE Facilities, 1/23/2009

SCART Guidelines, Reference Report for IAEA, 07/2008

Fostering a Strong Nuclear Safety Culture, NEI 09-07

NRC Inspection Manual Chapter 0310

DNFSB Technical Report 35, Safety Management of Complex, High-Hazard Organizations

DNFSB PS-1, Criteria for Judging the Adequacy of DOE Responses and Implementation Plans for Board Recommendations

Contract DE-AC27-01RV14136, Waste Treatment and Immobilization Plant

Independent Review of Nuclear Safety Culture at the Hanford Site Waste Treatment and Immobilization Plant Project; DOE Office of Health, Safety, and Security; October 2010

Nuclear Safety and Quality Culture (NSQC) Gap Assessment, 24590-WTP-SAA-MGT-11-00001; May 2011

Nuclear Safety and Quality Culture Plan, 24590-WTP-PL-MGT-10-00001, Rev.2; Bechtel National, Inc.; August 2011

Procedure: WTP Nuclear Safety and Quality Culture; 24590-WTP-GPP-MGT-061, Rev. 0; Effective Date: 20 September 2011

Final Safety Culture Policy Statement, Nuclear Regulatory Commission; Federal Register/Vol. 76, No. 114/Tuesday, June 14, 2011/Notices

Assessment of the 2011 Opinion Survey Results for Manual and Non-Manual Employees, prepared by Pillsbury, November 2011

Secretarial Review of Environmental Management (EM) Program and Projects, Report on the Office of Environmental Management Program and Project Organizations, August 2011

Confidential Findings of the Department of Energy's Office of General Counsel on Allegations Concerning the October 2010 Hearings of the Defense Nuclear Facilities Safety Board, February 11, 2011.

ATTACHMENTS

Attachment 1: June 9, 2011 DNFSB Chairman Peter S. Winokur Letter to Secretary Steven Chu, Recommendation 2011-1 *Safety Culture at the Waste Treatment and Immobilization Plant*

Attachment 2: June 30, 2011 Secretary Steven Chu Letter to DNFSB Chairman Peter S. Winokur

Attachment 3: June 30, 2011 DNFSB Chairman Peter S. Winokur Letter to Secretary Steven Chu

Attachment 4: August 12, 2011 DNFSB Chairman Peter S. Winokur Letter to Secretary Steven Chu

Attachment 5: September 12, 2011 Memorandum from the Deputy Secretary, Charter of DNFSB Recommendation 2011-1 Response Team

Attachment 6: September 19, 2011 Secretary Steven Chu Letter to DNFSB Chairman Peter S. Winokur

Attachment 7: October 13, 2011 DNFSB Chairman Peter S. Winokur Letter to Secretary Steven Chu

Attachment 1

Peter S. Winokur, Chairman
Jessie H. Roberson, Vice Chairman
John E. Mansfield
Joseph F. Bader

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Washington, DC 20004-2901

June 09, 2011

The Honorable Steven Chu
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Chu:

On June 09, 2011, the Defense Nuclear Facilities Safety Board (Board), in accordance with 42 U.S.C. § 2286a(a)(5), unanimously approved Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant*, which is enclosed for your consideration.

After you have received this Recommendation and as required by 42 U.S.C § 2286d(a), the Board will promptly make it available to the public. The Board believes that this Recommendation contains no information that is classified or otherwise restricted. To the extent that this Recommendation does not include information restricted by the Department of Energy (DOE) under the Atomic Energy Act of 1954, 42 U.S.C. §§ 2161-2168, as amended, please arrange to have it placed promptly on file in your regional public reading rooms. The Board will also publish this Recommendation in the *Federal Register*.

The Board will evaluate DOE's response to this Recommendation in accordance with the Board's Policy Statement 1, *Criteria for Judging the Adequacy of DOE Responses and Implementation Plans for DNFSB Recommendations*.

Sincerely,

Peter S. Winokur, Ph.D.
Chairman

Enclosure

c: Mrs. Mari-Jo Campagnone

RECOMMENDATION 2011-1 TO THE SECRETARY OF ENERGY
Safety Culture at the Waste Treatment and Immobilization Plant
Pursuant to 42 U.S.C. § 2286a(a)(5)
Atomic Energy Act of 1954, As Amended

Dated: June 09, 2011

Introduction

Secretary of Energy Notice SEN-35-91, *Nuclear Safety Policy*, issued on September 9, 1991, and superseding policy statement #2 of DOE Policy 420.1, *Department of Energy Nuclear Safety Policy*, issued on February 8, 2011, state that the Department of Energy (DOE) is committed to establishing and maintaining a strong safety culture at its nuclear facilities. The Defense Nuclear Facilities Safety Board (Board) has determined that the prevailing safety culture at the Waste Treatment and Immobilization Plant (WTP) is flawed and effectively defeats this Secretarial mandate. The Board's investigative record demonstrates that both DOE and contractor project management behaviors reinforce a subculture at WTP that deters the timely reporting, acknowledgement, and ultimate resolution of technical safety concerns.

Background

In a letter to the Secretary of Energy dated July 27, 2010, the Board stated that it would investigate the health and safety concerns at the WTP at Hanford raised in a letter to the Board dated July 16, 2010, from Dr. Walter Tamosaitis.

The Board's investigation focused on allegations raised by Dr. Tamosaitis, a contractor employee removed from his position at WTP, a construction project in Washington State funded by DOE and managed by Bechtel National, Incorporated (BNI). The Board's inquiry did not attempt to assess the validity of Dr. Tamosaitis's retaliation claim, but rather, as required by the Board's statute, examined whether his allegations of a failed safety culture at WTP, if proven true, might reveal events or practices adversely affecting safety in the design, construction, and operation of this defense nuclear facility.

The Board is required by statute to investigate any event or practice at a defense nuclear facility which it determines may adversely affect public health and safety. The Board conducted this investigation pursuant to its investigative power under 42 U.S.C. § 2286a(a)(2). During the course of the Board's inquiry, 45 witnesses were interviewed and more than 30,000 pages of documents were examined. The Principal Investigator was Joel R. Schapira, Deputy General Counsel, assisted by John G. Batherson, Associate General Counsel, and Richard E. Tontodonato, Deputy Technical Director. The record of the investigation is non-public and will be preserved in the Office of the General Counsel's files.

During the period of the investigation, the Board held a public hearing regarding safety issues at WTP. During that hearing the Board received additional information related to the kind

of safety culture concerns raised by Dr. Tamosaitis. Consequently, the investigation was expanded to review these new concerns.

Secretary of Energy Notice SEN-35-91, *Nuclear Safety Policy*, issued on September 9, 1991, and superseding policy statement #2 of DOE Policy 420.1, *Department of Energy Nuclear Safety Policy*, issued on February 8, 2011, state that DOE is committed to establishing and maintaining a strong safety culture at its nuclear facilities. The investigation's principal conclusion is that the prevailing safety culture at this project effectively defeats this Secretarial mandate. The investigative record demonstrates that both DOE and contractor project management behaviors reinforce a subculture at WTP that deters the timely reporting, acknowledgement, and ultimate resolution of technical safety concerns.

A key attribute of a healthy safety culture as identified by DOE's Energy Facility Contractors Group and endorsed by Deputy Secretary of Energy memorandum dated January 16, 2009, and in the Nuclear Regulatory Commission's proposed policy statement on safety culture (NRC-2010-0282, dated January 5, 2011), is that leaders demonstrate clear expectations and a commitment to safety in their decisions and behaviors. The Board's investigation found significant failures by both DOE and contractor management to implement their roles as advocates for a strong safety culture.

The record shows that the tension at the WTP project between organizations charged with technical issue resolution and development of safety basis scope, and those organizations charged with completing design and advancing construction, is unusually high. This unhealthy tension has rendered the WTP project's formal processes to resolve safety issues largely ineffective. DOE reviews and investigations have failed to recognize the significance of this fact. Consequently, neither DOE nor contractor management has taken effective remedial action to advance the Secretary's mandate to establish and maintain a strong safety culture at WTP.

Taken as a whole, the investigative record convinces the Board that the safety culture at WTP is in need of prompt, major improvement and that corrective actions will only be successful and enduring if championed by the Secretary of Energy. The successful completion of WTP's mission to remove and stabilize high-level waste from the tank farms is essential to protect the health and safety of the public and workers at Hanford. However, the flawed safety culture currently embedded in the project has a substantial probability of jeopardizing that mission.

Findings

Finding One: A Chilled Atmosphere Adverse to Safety Exists

In a letter to the Defense Nuclear Facilities Safety Board (Board) dated July 16, 2010, Dr. Walter Tamosaitis, a former engineering manager at the Waste Treatment and Immobilization Plant (WTP), alleged that he was removed from the project because he identified certain technical issues that in his view could affect safety. Dr. Tamosaitis also alleged that there was a failed safety culture at WTP. With full understanding that the formal claims of retaliation raised by Dr. Tamosaitis would be looked into by others, the Board decided that his assertions raised serious questions about safety culture and safety management at WTP. From late July

2010 to May 2011, the Board reviewed a large number of documents and interviewed a substantial number of persons, including Dr. Tamosaitis, to assess whether or not his allegations of safety issues and of a faulty safety culture were borne out. The Board's investigation later expanded in scope to address matters related to the Board's October 2010 public hearing at Hanford on safety issues at WTP. This phase of the investigation consisted of closed hearings at which sworn testimony was elicited from DOE and contractor personnel.

The Board finds that the specific technical issues identified by Dr. Tamosaitis in his July 16, 2010, letter were known and tracked by the WTP project. In a WTP project managers' meeting on July 1, 2010, Dr. Tamosaitis raised safety concerns related to the adequacy of vessel mixing, technical justifications for closing mixing issues, and other open technical issues. The next day he was abruptly removed from the project. This sent a strong message to other WTP project employees that individuals who question current practices or provide alternative points of view are not considered team players and will be dealt with harshly.

The Board finds that expressions of technical dissent affecting safety at WTP, especially those affecting schedule or budget, were discouraged, if not opposed or rejected without review. Project management subtly, consistently, and effectively communicated to employees that differing professional opinions counter to decisions reached by management were not welcome and would not be dealt with on their merits. There is a firm belief among WTP project personnel that persisting in a dissenting argument can lead, as in the case of Dr. Tamosaitis, to the employee being removed from the project or reassigned to other duties. As of the writing of this finding, Dr. Tamosaitis sits in a basement cubicle in Richland with no meaningful work. His isolated physical placement by contractor management and the lack of meaningful work is seen by many as a constant reminder of what management will do to an employee who raises issues that might impact budget or schedule.

Other examples of a failed safety culture include:

- The Board heard testimony from several witnesses that raising safety issues that can add to project cost or delay schedule will hurt one's career and reduce one's participation on project teams.

- A high ranking safety expert on the project testified that the expert felt next in line for removal after Dr. Tamosaitis because of the expert's refusal to yield to technically unsound positions on matters affecting safety advanced by DOE and contractor managers responsible for design and construction at the WTP. This safety expert's concern was validated by a senior DOE official in separate sworn testimony.

- A report prepared by a subcontractor on the WTP project, "URS Report of Involvement in WTP Investigation," discusses the "tension between organizations charged with technical issue resolution and development of safety basis related scope and those organizations charged with completing design and advancing construction. Some level of such tension is normal and healthy in projects of such scope and complexity; but at WTP, this tension is higher than what might be expected or desired. Some individuals whose personalities tend toward avoidance of conflict could view the organizational environment as not conducive to raising issues or

perhaps even potentially suppressing some issues that might deter progress or that might add cost."

- The investigative record shows that the DOE Office of River Protection Employee Concerns program is not effective. One safety expert explicitly testified that employees would not and did not use the program, and believed that individuals running the program would "bury issues" brought to them. The record shows that in the removal of Dr. Tamosaitis, Human Resources (HR) for URS was interested only in implementing management's demand that the employee be removed immediately. The record shows HR did not assert any consideration or concern regarding the effect the process and manner of his removal would have on the remaining workforce and the effectiveness of the contractor employee protection program required under 10 CFR Part 708.

- An independent review of the WTP safety culture performed by DOE's Office of Health, Safety and Security (HSS) found that "a number of individuals have lost confidence in management support for safety, believe there is a chilled environment that discourages reporting of safety concerns, and/or are concerned about retaliation for reporting safety concerns. These concerns are not isolated and warrant timely management attention, including additional efforts to determine the extent of the concerns." Although the HSS report stated that most WTP personnel did not share these opinions, the Board notes that personnel interviewed by HSS were escorted to their interviews by management. The Board's record shows that involving management with the interviews clearly can inhibit the willingness of employees to express concerns. In its own way, DOE's decision to allow management to be involved in the HSS investigation raises concerns about safety culture.

This environment at WTP does not meet key attributes established by DOE's Energy Facility Contractors Group, and endorsed by the Deputy Secretary of Energy, that describe a strong safety culture: DOE and contractor leadership must have a clear understanding of their commitment to safety; they are the leading advocates of safety and the public trust demands that they demonstrate their commitment in both word and action. The Board's investigation concludes that the WTP project is not maintaining a safety conscious work environment where personnel feel free to raise safety concerns without fear of retaliation, intimidation, harassment, or discrimination.

Finding Two: DOE and Contractor Management Suppress Technical Dissent

The HSS review of the safety culture on the WTP project "indicates that BNI has established and implemented generally effective, formal processes for identifying, documenting, and resolving nuclear safety, quality, and technical concerns and issues raised by employees and for managing complex technical issues." However, the Board finds that these processes are infrequently used, not universally trusted by the WTP project staff, vulnerable to pressures caused by budget or schedule, and are therefore not effective. Previous independent reviews, contractor surveys, investigations, and other efforts by DOE and contractors demonstrate repeated, continuing identification of the same safety culture deficiencies without effective resolution.

Suppression of technical dissent is contrary to the principles that guide a high-reliability organization. It is essential that workers feel empowered to speak candidly without fear of retribution or criticism. In extreme cases, refusal to consider a different view of a safety issue can lead to catastrophic consequences. WTP is a complex and difficult project that is essential to the nation's nuclear waste remediation program. Therefore, federal and contractor managers must make a special effort to foster a free and open atmosphere in which all competent opinions are judged on their technical merit, to sustain or improve worker and public safety first and foremost, and then evaluate potential impacts on cost and schedule.

One of the primary examples of suppressing technical information is a study that was performed by BNI in July 2009 on deposition velocity, a parameter used in modeling the offsite transport of radioactive particles for nuclear facility safety analyses. The study found that the correct value of the dry deposition velocity for Hanford fell in the range of 0.1 to 0.3 cm/sec. The Board's investigation includes testimony by the former manager of DOE's Office of River Protection and the DOE Chief of Nuclear Safety in Washington, DC, that the results of this study were not shared with them. Consequently, DOE continued to follow its policy requiring the WTP project to use a less conservative default value of 1.0 cm/sec for dry deposition velocity. In the fall of 2010, the Chief of Nuclear Safety hired an independent consultant to investigate the issue. This consultant also found that deposition velocity fell in the range of 0.1 to 0.3 cm/sec, information that was already available to the project in the summer of 2009. Suppression of the 2009 study delayed the identification of properly conservative values for dry deposition velocity to use in the safety analyses that determine the need for safety-related controls for WTP facilities. Once this information was made available to DOE's Office of Health, Safety and Security, a technical study ensued that determined the need for a more conservative value of deposition velocity to serve as a default value.

This problem also manifested itself when one of the expert witnesses, a nuclear safety professional, specifically asked by the Board to testify at the Board's October 2010 public hearing on WTP safety issues, failed to support the DOE policy on the appropriate value for dry deposition velocity. This witness testified that using DOE's prescribed default value for the dry deposition velocity in safety basis calculations could not be justified if it were known to be non-conservative for the Hanford Site. At the time of the hearing, the witness understood the correct value of deposition velocity was not being used in calculations of potential dose consequences to the public receptor and was unwilling to simply state the DOE position that a default value could be used or justified. The expert witness later testified for the record that DOE was fully aware of the July 2009 study on dry deposition velocity at the time of the public hearing. The expert witness' testimony during the public hearing clashed with the position taken by senior management in the DOE Office of River Protection and by the DOE Chief of Nuclear Safety.

The testimony of several witnesses confirms that the expert witness was verbally admonished by the highest level of DOE line management at DOE's debriefing meeting following this session of the hearing. Although testimony varies on the exact details of the verbal interchange, it is clear that strong hostility was expressed toward the expert witness whose testimony strayed from DOE management's policy while that individual was attempting to adhere to accepted professional standards. Testimony by a senior DOE official confirmed the

validity of the expert witness' concerns. In addition, the expert witness testified that they felt pressure to change their testimony, but refused to do so.

Management behavior of this kind creates an atmosphere in which workers are reluctant to speak candidly for fear of retribution or criticism. Whether or not this behavior possibly violates federal law is not for the Board to determine; however, the Board does assert that fear of retribution visited on a competent professional for offering an honest opinion in a public hearing is incompatible with the objective of designing and building a safe and operationally sound nuclear facility and sustaining a healthy safety culture.

Another example of failure to act on technical information in a timely manner concerns a report related to the occurrence of a potential criticality event at WTP. In April 2010, the WTP project issued a plan of action to address recommendations of the WTP Criticality Safety Support Group, specifically, to review historical information on plutonium dioxide (PuO_2) wastes discharged by the Plutonium Finishing Plant to the tank farms. The report of the review was completed and submitted to the WTP project in August 2010. A key finding of the report was that the maximum PuO_2 particle size of 10 microns assumed in WTP criticality safety analyses was not conservative. Instead of receiving immediate attention, the report languished without action until February 2011.

Once the report was finally reviewed, the WTP project reached the initial conclusion that it may no longer be possible to assume that criticality in WTP is an incredible occurrence. (Based on this information, the Hanford Tank Farms operating contractor halted activities involving the affected tanks.) If criticality is confirmed to be credible, changes in the WTP criticality strategy will be required. This will result in changes to the existing safety basis and require an assessment of the existing WTP design to determine if design changes are required. Depending upon the magnitude of the criticality hazard, significant changes in the WTP design may be necessary. DOE was not informed of this important finding in a timely manner, and actions to better characterize the PuO_2 problem were delayed by approximately 6 months because the WTP project delayed evaluation of the report.

Recommendation

Taken as a whole, the investigative record convinces the Board that the safety culture at WTP is in need of prompt, major improvement and that corrective actions will only be successful and enduring if championed by the Secretary of Energy. The Board recommends that the Secretary of Energy:

1. assert federal control at the highest level and direct, track, and validate the specific corrective actions to be taken to establish a strong safety culture within the WTP project consistent with DOE Policy 420.1 in both the contractor and federal workforces,

2. conduct an Extent of Condition Review to determine whether these safety culture weaknesses are limited to the WTP Project, and

3. conduct a non-adversarial review of Dr. Tamosaitis' removal and his current treatment by both DOE and contractor management and how that is affecting the safety culture at WTP.

The Board urges the Secretary to avail himself of the authority under the Atomic Energy Act (42 U.S.C. § 2286d(e)) to "implement any such recommendation (or part of any such recommendation) before, on, or after the date on which the Secretary transmits the implementation plan to the Board under this subsection."

Peter S. Winokur, Ph.D., Chairman

The Secretary of Energy
Washington, D.C. 20585

June 30, 2011

The Honorable Peter S. Winokur
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004-2901

Dear Mr. Chairman:

The Department of Energy (DOE) acknowledges receipt of Defense Nuclear Facilities Safety Board (Board) Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant*, issued on June 9, 2011. DOE views nuclear safety and assuring a robust safety culture as essential to the success of the Waste Treatment and Immobilization Plant (WTP) and all of our projects across the DOE complex.

As the Board notes in the introduction to this Recommendation, DOE committed itself to establishing and maintaining a strong nuclear safety culture almost 20 years ago through Secretary of Energy Notice SEN-35-91, *Nuclear Safety Policy*. This commitment was reiterated and confirmed in February 2011, in DOE Policy 420.1, *Department of Energy Nuclear Safety Policy*. We agree with the Board's position that establishment of a strict safety culture must be a fundamental principle throughout the DOE complex, and we are in unqualified agreement with the Board that the WTP mission is essential to protect the health and safety of the public, our workers, and the environment from radioactive wastes in aging storage tanks at Hanford.

It is DOE policy and practice to design, construct, operate, and decommission its nuclear facilities in a manner that ensures adequate protection of workers, the public, and the environment. DOE line management is both responsible and accountable for assuring that such adequate protection is at the core of how we conduct business at our nuclear facilities. We hold our contractors to the same standard. A strong nuclear safety and quality culture is the foundation of our work.

Over the past year, the Department has undertaken a broad range of steps to assure a strong and questioning safety culture at WTP and sites across the DOE complex. We will only be successful if we remain committed to continuous improvement and teamwork. DOE takes all safety concerns – whether from our employees, our contractors, the Board, or third-parties – very seriously. This input is an integral part of the Department's efforts to constantly strengthen nuclear safety at our facilities.

Even though the Department cannot accept the allegations without the opportunity to evaluate the Board's full investigative record, in the spirit of continual improvement DOE accepts the Board's recommendations to assert federal control to direct, track, and validate corrective actions to strengthen the safety culture at WTP; conduct an extent of condition review to assess safety culture issues beyond the WTP project; and support the ongoing Department of Labor (DOL) review of Dr. Tamosaitis' case.

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Reinforcing and maintaining a strong safety culture at WTP and all DOE sites will require a wide range of approaches, including engagement by senior DOE officials, employee input and participation, self assessments, independent oversight by the Office of Health, Safety and Security (HSS), recommendations from the Board, and an open and transparent process to identify and implement technical issues and corrective actions.

We agree with the Board that "federal and contract managers must make a special effort to foster a free and open atmosphere in which all competent opinions are judged on their technical merit, to sustain or improve worker and public safety first and foremost, and then [to] evaluate potential impacts of cost and schedule." These expectations are clearly articulated in DOE Policy 442.1, *Differing Professional Opinion*; DOE Manual 442.1-1, *Differing Professional Opinions Manual for Technical Issues Involving Environment, Safety, and Health*, and DOE Order 442.1A, *Department of Energy Employee Concerns Program*.

To assure that these issues were being appropriately addressed following Dr. Tamosaitis' initial allegations, the Assistant Secretary for Environmental Management (EM) requested that HSS conduct a comprehensive analysis of the safety culture at WTP.

In October 2010, HSS completed its investigation, which included interviews with more than 250 employees. While HSS found that the fundamentals of a robust safety culture were present at WTP, the report identified the need for improvement in key areas, including, among others: more clearly defining federal roles and responsibilities; identifying mechanisms to strengthen trust among the workforce and better communicate information to employees; and putting in place processes to ensure nuclear safety programs remain robust and effective during project changes.

The corrective actions that address the recommendations from the HSS report will be fully implemented by September 30, 2011. HSS will then conduct a follow-on visit to assure that these steps were executed effectively across the project, as well as to perform additional analysis to determine if cost and schedule pressures are challenging the implementation of a robust nuclear safety culture.

DOE and Bechtel National, Incorporated (BNI) – the prime contractor on the WTP project – have been engaged in a variety of initiatives to strengthen the nuclear safety culture at WTP for over a year. Steps that have already occurred include completing a revision to the WTP Project Execution Plan, currently under review, to more clearly delineate federal roles and organizational responsibilities at WTP and the Office of River Protection (ORP), and conducting a number of employee forums to ensure that employees clearly understand the changes in those roles and responsibilities.

Also in response to the HSS recommendations, BNI commissioned a confidential survey of more than 300 WTP employees to assess if a Nuclear Safety Quality Culture (NSQC) gap existed at the site and to identify additional areas for improvement. As a result, the contractor assigned a retired Navy Admiral and former nuclear utility executive experienced in application of Institute of

Nuclear Power Operations (INPO) methods as the Manager of NSQC Implementation for the project. To date, approximately 1,600 people at the site, including all senior managers, have received training focused on making the workforce comfortable with raising issues and systematically moving issues through to resolution. In addition, over the last 13 months, BNI has conducted three all-hands meetings with DOE project team participation to emphasize the importance of a robust nuclear safety culture.

Even while some initiatives are already underway, we recognize the need to continue improving nuclear safety at WTP and across the complex. To that end, DOE has developed a comprehensive action plan to address the Board's specific recommendations to strengthen the safety culture at WTP. Initial steps are discussed below:

- The Deputy Secretary and I will continue to be personally engaged in asserting federal control to ensure the specific corrective actions to strengthen safety culture within the WTP project in both contractor and federal workforces – consistent with DOE Policy 420.1 – are tracked and validated. Federal control within the WTP project has been and will continue to be asserted and regularly reinforced through our direct involvement.

- This will include a series of "town-hall" style meetings hosted by senior DOE officials to highlight for workers the importance of maintaining a strong nuclear safety culture at each of our sites and to solicit their input. These forums across the DOE complex will also help improve the direct communication of safety issues between senior managers and employees.

- To address the concern regarding extent of condition, HSS will independently review the safety culture across the entire complex. This review will provide insights into the health of safety culture within Headquarters organizations, different program offices, and different field sites.

- In addition, DOE and BNI are arranging Safety Conscious Work Environment (SCWE) training for BNI and ORP managers and supervisors with a firm that conducts SCWE training for the Institute of Nuclear Power Operations Senior Nuclear Plant Manager's course.

- We will also be joining with BNI to sponsor an independent, executive-level assessment of the project's nuclear safety culture by a group of nuclear industry subject matter experts, who have experience in INPO evaluations and/or Nuclear Regulatory Commission (NRC) inspections.

- At both a site and corporate level, we are also taking steps to enhance reporting mechanisms for safety-related concerns. At the Hanford site, we have combined the Employee Concerns Programs for ORP and the Richland Operations Office to leverage existing resources to both strengthen this important program and increase its visibility at the site.

- Within EM Headquarters, we have established ombudsmen to act as advocates for employees and their concerns. We have made it easier for employees to use a variety of

avenues to raise concerns, including: the line management for each project, site employee concerns programs, union representatives, EM's Office of Safety and Security Programs, HSS, and DOE's Chief of Nuclear Safety. Each office now offers employees access to both a hotline number and general email inbox, so that workers will have the opportunity to ask questions or voice concerns either directly or anonymously.

- We will also require that both EM Headquarters and field sites assess nuclear safety culture and the implementation of a safety conscious work environment in their annual submittals for Integrated Safety Management System (ISMS) declarations. The specific criteria will build on the existing requirements for the ISMS declarations and will be expanded to include safety culture principles not only from DOE, but also from INPO and NRC.

- Regarding your final recommendation, when the Department became aware of Dr. Tamosaitis' petition to the Board, the Assistant Secretary for Environmental Management immediately requested the Department's Inspector General to perform an investigation into the alleged retaliation issues raised by Dr. Tamosaitis. The Office of the Inspector General decided not to examine the merits of the allegations since they were already the focus of an ongoing investigation by DOL, which has jurisdiction and expertise to review whistle blower claims. The Department will fully cooperate with the DOL as requested in its investigation.

Even while DOE fully embraces the objectives of the Board's specific recommendations, it is important to note that DOE does not agree with all of the findings included in the Board's report.

Specifically, the conclusions drawn by the Board about the overall quality of the safety culture at WTP differ significantly from the HSS findings and are not consistent with the safety culture data and field performance experience at WTP. We are concerned that your letter includes the October 2010 HSS review in the list of "other examples of a failed safety culture." The Department disagrees with this categorization and believes the HSS report provided an accurate representation of the nuclear safety culture – and existing gaps – at the WTP.

As discussed above, the HSS review found areas in need of immediate improvement; however, most WTP personnel did not express a loss of confidence in management support, a sense of a chilled environment, or a fear of retaliation.

Additionally, in its report, the Board alleges that DOE and contractor management suppressed technical dissent on the project. The Department rightly takes any such claim very seriously. Based on an investigation by the DOE Office of the General Counsel, however, we do not necessarily agree with some of the specific details the Board provided. For example, our investigation found no evidence that DOE or its contractors were aware of and sought to suppress a technical report.

Moreover, the Board's findings appear to rely on a number of accounts describing the actions and behaviors of both contractor and DOE personnel that we believe may have been misunderstood by the Board. The Department feels compelled to address these for the public record and in fairness to its personnel.

To do so effectively, on June 22, 2011, DOE requested the Board's full investigative record, including transcripts, interview notes, and exhibits. Per your conversation with Deputy Secretary Daniel Poneman today, we look forward to continuing to engage with you to obtain additional details from the Board's investigation. The Board's investigative record or other supporting information will allow us to provide further details on specific discrepancies between our findings and the Board's and will be of great use in defining the structure and scope of follow-on safety culture improvement initiatives and actions.

We look forward to working with the Board and its staff as we continue to strive towards excellence. It is important for the both the Department and the Board to function collaboratively and openly as we work to further improve the safety culture at DOE. To facilitate that objective and in recognition of the significance of these concerns, I recommend we jointly charter a third-party review, such as the National Academy of Science, to evaluate how we can strengthen our relationship and most effectively work together to achieve our shared objective of helping DOE to safely perform its mission.

As additional information becomes available from our actions addressing this Recommendation, we will make it available to you. We hope to continue a meaningful, regular, and open dialogue on this and all safety matters.

I am designating Mr. Daniel Poneman, the Deputy Secretary of Energy, as the Responsible Manager for this recommendation. He will be charged with reporting to me regularly on the specific additional steps we are taking to improve the safety culture at WTP and all of our facilities.

Sincerely,

Steven Chu

cc:
D. Poneman, S-2
M. Campagnone, HS-1.1

Attachment 3

Peter S. Winokur, Chairman
Jessie H. Roberson, Vice Chairman
John E. Mansfield
Joseph F. Bader

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Washington, DC 20004-2901

June 30, 2011

The Honorable Steven Chu
Secretary of Energy
U. S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Chu:

The Board has received a letter from Deputy Secretary of Energy Poneman dated June 22, 2011, in which the Department of Energy (DOE) requests access to the Board's confidential investigative files pertaining to Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant*. As was stated in the recommendation, this investigation was conducted pursuant to 42 U.S.C. § 2286a(a)(2), the provision in the Atomic Energy Act stating that the Board "shall investigate any event or practice at a Department of Energy defense nuclear facility which the Board determines has adversely affected, or may adversely affect, public health and safety."

Since the Board began operation, confidentiality of communications from concerned employees or the public, coupled with expert technical integrity has served both the Board and DOE to ensure adequate protection of public health and safety and appropriate resolution of public health and safety concerns. Therefore, the Board declines the Deputy Secretary's request for access to the Board's investigative files.

The Board believes that DOE's need to further assess the conclusions reached by the Board in Recommendation 2011-1 can be substantially satisfied with information in the DOE's possession, control, or in the public record. This information is readily accessible without compromising the public trust in the Board. This preserves both agencies' interest in accessing information to promote safety. An objective review of the documents identified in the enclosure will serve to inform DOE's assessment of Recommendation 2011-1.

Sincerely,

Peter S. Winokur, Ph.D.
Chairman

cc: Mari-Jo Campagnone

Enclosure

ENCLOSURE

1. The Defense Nuclear Facilities Safety Board (Board) requested preservation of data on the Waste Treatment and Immobilization Plant (WTP) Project M-drive by the Secretary of Energy in a letter dated July 27, 2010. The Department of Energy (DOE) has access to relevant e-mails preserved on the WTP Project M-drive.

2. DOE has access to the report *Independent Investigation into Alleged Retaliation* conducted on behalf of Bechtel National, Incorporated (BNI), dated September 9, 2010, and underlying information.

3. DOE has access to an internal investigation conducted by URS Corporation that was issued as a report entitled *Report of Involvement in WTP Investigation*, dated August 16, 2010, and underlying information.

4. DOE has access to an independent review by the DOE Office of Health, Safety and Security (HSS) entitled *Independent Review of Nuclear Safety Culture at the Hanford Site Waste Treatment and Immobilization Plant Project*, dated October 2010.

5. DOE has access to the notes and memoranda associated with or supporting the independent review conducted by HSS. Although the HSS independent review was not an investigation, the Board suggests that DOE review the information developed during the HSS effort very closely.

6. DOE has access to BNI's completed assessment report *Nuclear Safety and Quality Culture (NSQC) Gap Assessment*, dated February 22, 2011, based on the HSS independent review recommendations.

7. Attorneys from the DOE Office of General Counsel (OGC) accompanied DOE employees to several investigation interviews and one closed hearing, and therefore have knowledge and access to testimony given and exhibits offered into the record of that part of the Board's investigation.

8. DOE has access to the notes and memoranda associated with an internal investigation conducted by the DOE OGC.

9. DOE has access to the initial complaint filed by Dr. Tamosaitis.

10. As provided by the Atomic Energy Act of 1954, as amended, DOE will have access to the public comments filed with the Board in connection with Recommendation 2011-1.

11. DOE has access to DOE investigations at other sites. For example, DOE has access to the November 23, 2010, Office of Environmental Management Type B Investigation report *Radiological Contamination Event During Separations Process Research Unit Building H2 Demolition, September 29, 2010.*

Peter S. Winokur, Chairman
Jessie H. Roberson, Vice Chairman
John E. Mansfield
Joseph F. Bader

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Washington, DC 20004-2901

August 12, 2011

The Honorable Steven Chu
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Chu:

The Defense Nuclear Facilities Safety Board (Board) has received and reviewed your June 30, 2011, response to the Board's Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant* (WTP). Your letter states that the Department of Energy (DOE) accepts the Recommendation, but that DOE does not agree with the findings in the Board's report — in particular, DOE disagrees with the Board's assessment of the overall quality of the safety culture at WTP, and indicates that the cited Office of Health, Safety and Security (HSS) report supports the conclusion that the WTP project has a robust and strong safety culture.

The Board appreciates the rapid response provided by you and your staff, and believes that the immediate actions you outlined will serve as a start to addressing this issue. However, the disparity between the stated acceptance and disagreement with the findings makes it difficult for the Board to assess the response against the Board's Policy Statement 1, *Criteria for Judging the Adequacy of DOE Responses and Implementation Plans for Board Recommendations*. The Board believes that an objective review of the following items will lead to greater alignment between the DOE and the Board on the basis for Recommendation 2011-1:

- the sources of supporting information identified in the Board's June 30, 2011, letter;
- the underlying data in the HSS report, especially the data from interviews with management and engineering personnel;
- the public comments received on Recommendation 2011-1, which have been transmitted to you by the Board's letter of August 3, 2011; and
- Differing Professional Opinions and union grievances relating to the disposition of WTP design issues within the DOE Office of River Protection.

Further, with regard to Sub-recommendation 3, based on your response, the Board is concerned that we did not clearly communicate our intent.

> *Sub-recommendation 3: conduct a non-adversarial review of Dr. Tamosaitis' removal and his current treatment by both DOE and contractor management and how that is affecting the safety culture at WTP.*

Your response restates Sub-recommendation 3 as recommending that DOE "support the ongoing Department of Labor (DOL) review of Dr. Tamosaitis' case." The Board is aware that DOL is investigating whistleblower claims and allegations of retaliation against Dr. Tamosaitis. Sub-recommendation 3 is intended to address a separate issue. The Board is convinced that DOE would learn meaningful lessons for improving the safety culture of the WTP project if it reviewed the effects that the circumstances of Dr. Tamosaitis' removal from the WTP project and his current treatment are having on the safety culture at WTP.

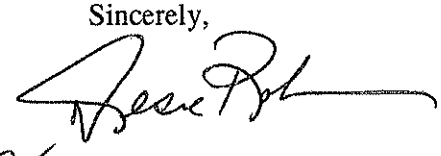
In order to provide sufficient time for you and your staff to address these items in your response to Recommendation 2011-1, the Board hereby provides the additional 45 days allowed under 42 U.S.C. § 2286d(b). Thus your acceptance or rejection should be transmitted by September 19, 2011.

To effectively judge DOE's response to Recommendation 2011-1, the Board is seeking clarification in the following areas:

- DOE's present assessment of the safety culture at WTP in light of the additional sources of supporting information now available to you;
- DOE's current understanding of the conclusions of the HSS report;
- DOE's present understanding and response to Sub-recommendation 3; and
- the independence, public stature, and leadership experience of the implementation team that will be called upon to provide safety culture insights and assessments to yourself and senior DOE leadership.

The Board agrees with you that it is important for both DOE and the Board to work toward setting and maintaining a high standard for the safety culture at DOE's defense nuclear facilities. To support that requirement and in recognition of the significance of the concerns raised in Recommendation 2011-1, the Board designates Ms. Jessie Roberson, Vice Chairman, as the Board's lead in this matter, to work directly with the Deputy Secretary of Energy.

Sincerely,



Peter S. Winokur, Ph.D.
Chairman

c: Ms. Mari-Jo Campagnone

The Deputy Secretary of Energy
Washington, DC 20585

September 12, 2011

MEMORANDUM FROM THE DEPUTY SECRETARY

Charter of DNFSB Recommendation 2011-1 Response Team

Purpose: This charter provides guidance to the Response Team that is developing the Implementation Plan (IP) for Recommendation 2011-1, (R2011-1) for approval by the R2011-1 Responsible Manager, the Deputy Secretary.

Approach and Philosophy: At the Department's Nuclear Safety Workshop, in June 2011, the Deputy Secretary reaffirmed that the Department is strongly committed to the Integrated Safety Management System; that responsibility for safety must be vested in Line Management; that safety is not merely a status but also a process, which requires the constant attention of everyone in the enterprise. During a visit to Hanford in July 2011, the Deputy Secretary underlined the importance the Department attaches to safety as an integral part of our mission; that safety requires vigilance by federal and contractor workers at Hanford alike; that we must hold ourselves and one another accountable for safety; and that a robust and questioning nuclear safety culture is to be encouraged and welcomed.

Scope: The Response Team will develop an Implementation plan for R2011-1 for approval by the Responsible Manager using the process described in DOE M 140.1-1B *Interface with the Defense Nuclear Facilities Safety Board* (or successor document).

The IP will include, as a minimum, all actions described in the Secretary's June 30, 2011 response letter, except the joint charter of a third party review mentioned in the Secretary's acceptance letter of 06/30/2011, which requires consent by the Board and thus will be initiated by separate action.

The IP will address all three sub-recommendations contained in R2011-1.

During development of the IP, the Response Team will keep the DNFSB staff fully informed. In addition, discussions between the Board and the Responsible Manager will precede finalization of the IP.

Roles and Responsibilities:

The Responsible Manager: In the Secretary's response letter for R2011-1, the Deputy Secretary was designated as the Responsible Manager. The duties and responsibilities of the Responsible Manager are described in DOE M 140.1-1B, and discussed below.

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The Responsible Manager may appoint a Technical Lead, and delegate day-to-day activities for managing development of the Implementation Plan to that individual. Regardless of whether the Responsible Manager delegates coordination of implementation planning to a Technical Lead, the Responsible Manager maintains clear sponsorship and communicates frequently with the response team. The Responsible Manager engages in the development process by describing the expectations of the team, reviewing progress, ensuring adequate technical basis, making key decisions, representing the Department's position to the Board and its staff, and keeping the cognizant Secretarial Officer, in this case the Secretary, informed, as stated in the Secretary's response letter to R2011-1. To assist the Responsible Manager on this important effort Dae Chung, Principal Deputy Chief for Nuclear Safety and Technical Matters, from the Office of Health, Safety and Security will serve as a Senior Advisor to the Response Team.

The Response Team Technical Lead is the Office of Environmental Management (EM) Deputy Assistant Secretary, Safety and Security Program, to which the Responsible Manager has delegated coordination of response development and implementation planning, as provided for in DOE M 140.1-1B, and discussed below.

The Technical Lead manages the day-to-day functions of the response, planning, implementation, and tracking, and keeps the Responsible Manager informed of the status.

The Technical Lead keeps the Responsible Manager informed of any issues that need senior management attention.

The Technical Lead ensures status updates to the Safety Issues Management System are submitted.

Since R2011-1 concerns cross-organizational issues, the Technical Lead will provide at least quarterly briefings to the Nuclear Safety and Security Council (NSSC).

The Issue Lead for R2011-1 is a staff member of the Office of the Departmental Representative, with duties and responsibilities as described in DOE M 140.1-1B, and discussed below.

The Issue Lead supports the designated Responsible Manager and Technical Lead throughout the development and implementation of the Department's plan to resolve the recommendation. The Issue Lead participates as a member of the response team, and supports the Responsible Manager and Technical Lead on identification, tracking, and closure of associated commitments in the Safety Issues Management System, and facilitates communications between the Response Team and the Board staff.

Members of the Response Team are:

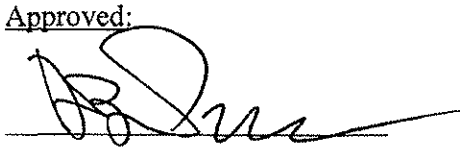
Technical Lead – Jim Hutton, Office of Environmental Management
Issue Lead – Nick Suttora, Office of Departmental Representative
HSS – John Boulden, Director, Office of Enforcement
WTP Project – Jeff Trent, WTP Headquarters Laison
SRS – Michael Mikolanis, Chief Engineer
PPPO – Jack Zimmerman, Program Manager
RL – Ray Corey, Assistant Manager for Safety and Environment
NNSA – Jim McConnell, Assistant Deputy Administrator
NNSA Field – Mike Zamorski, Senior Technical Advisor
EFCOG – John McDonald
SC – Carol Sohn
National Labs - Cindy Caldwell, PNNL
Dr. Steven L. Krahn, CRESP, Vanderbilt University

References: There are many information sources the Response Team may refer to in the course of developing the IP. Some references in addition to DOE internal documents which may help inform the Response Team as the IP is developed are listed below.

1. Board Recommendation 2011-1, Safety Culture at the Waste Treatment and Immobilization Plant, dated 06/09/2011.
2. Secretary's response to R2011-1, dated 06/30/2011.
3. Board Letter to the Secretary, dated 06/30/2011, and enclosed list of references.
4. Principles for a Strong Nuclear Safety Culture, INPO, 11/04.
5. EFCOG/DOE ISMS Safety Culture Task Team Final Report, 06/04/2010.
6. EFCOG Safety Culture Background – Linkage to ISM, 11/2008.
7. EFCOG/DOE Assessing Safety Culture in DOE Facilities, 1/23/2009
8. NRC Final Safety Culture Policy Statement, 06/14/2011.
9. SCART Guidelines, Reference Report for IAEA, 07/2008.
10. Fostering a Strong Nuclear Safety Culture, NEI 09-07.
11. NRC Inspection Manual Chapter 0310.
12. DNFSB Technical Report 35, Safety Management of Complex, High-Hazard Organizations.
13. DNFSB PS-1, Criteria for Judging the Adequacy of DOE Responses and Implementation Plans for Board Recommendations.

Schedule: The Implementation Plan will be prepared, approved and submitted as soon as possible and no later than 90 days from the Secretary's response letter to R2011-1 being published in the Federal Register as required by the Board's statue.

Approved:



The Secretary of Energy
Washington, DC 20585

September 19, 2011

The Honorable Peter S. Winokur
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004-2901

Dear Mr. Chairman:

This letter responds to your August 12, 2011 letter, which requested clarification on four areas identified in our original June 30, 2011, response to your Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant (WTP)*. As you know, because this issue is of such great importance to the Department of Energy (DOE), I have designated Deputy Secretary Poneman as the Responsible Manager for this Recommendation, and he has already begun our efforts to address the issues our staffs have discussed. The Department appreciates the opportunity to provide further clarification and believes that keeping avenues of communication open will help improve our safety culture. In our previous correspondence, the Department conveyed its acceptance of the Recommendation 2011-1 and now offers the following clarification in the areas requested:

1. *DOE's present assessment of the safety culture at WTP in light of the additional sources of supporting information now available to DOE.*

   The Department has reviewed the incoming public comments and additional WTP safety culture-related information. On one hand, we are pleased that individuals have felt encouraged to step forward and express their concerns, to the extent that indicates that our broad message welcoming such input is being heard. On the other hand, the content of many of these messages shows that we need to continue to improve WTP's safety culture. The Department will also continue to evaluate the efficacy of applicable DOE and contractor policies and procedures, including the procedures for resolving differing professional opinions and other employee concerns.

2. *DOE's current understanding of the conclusions of the HSS report.*

   The Health, Safety and Security (HSS) report, like all reports based on interviews, captured a snapshot in time. The report reflected the views of the interviewees as they perceived the existing situation, as interpreted by the report's authors. As your letter implies, given our steadfast commitment to safety we must continually update data and refresh conclusions based on what we learn. We have done that by reviewing the incoming comments we have received during the Deputy Secretary's July visit to Hanford and subsequently through other channels; as noted above, these have made clear that we have more work to do. That is why we have asked HSS to conduct a follow-on safety culture review at WTP as part of its broader extent-of-condition review across the DOE complex. Those reviews are scheduled to begin later this month, and we will apply what we learn in those reviews to continue our efforts to improve the safety culture at Hanford.

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3. *DOE's present understanding and response to Sub-recommendation 3.*

   DOE understands the distinction being made by the Board that there is a difference between judging the merits of a particular case between opposing parties still in dispute, and the effect that the perceptions of that controversy – regardless of the merits of the underlying case – may have on a community. We also agree with the Board that such perceptions can have a material effect on the safety culture at a site and in a community. In developing our Implementation Plan on Recommendation 2011-1, the DOE therefore will continue to work to establish a strong safety culture that takes the power of perceptions fully into account.

4. *The independence, public stature, and leadership experience of the implementation team that will be called upon to provide safety culture insights and assessments to the Secretary and Senior DOE leadership.*

   We accept the implicit premise of the request, i.e., that the independence, stature, and leadership experience of the implementation team that will be called upon to provide safety culture insights and assessments to the Secretary and Senior DOE leadership is of crucial importance. In this regard, the review team members are selected based on their technical competence, objectivity, experience in safety management, executive leadership, and a clear understanding of corporate culture. DOE recognizes the heightened need to include "knowledgeable others" in the safety culture review process. The Department will therefore engage independent industry safety culture experts to evaluate the Implementation Plan (IP), and also to evaluate the quality of major IP deliverables.

   Both DOE and Bechtel National Incorporated (BNI) will be performing safety culture reviews at WTP. The Department welcomes BNI's initiative in engaging qualified industry experts. DOE will monitor and cooperate with – but not partner in – the BNI review in order to gauge the validity of the BNI process. DOE will also examine the results of the review for relevant findings.

   Of course, BNI's activities are not a substitute for DOE-directed reviews, which is why we are undertaking our own assessment concurrently. The HSS review will also help update our understanding of the current status of nuclear safety culture at WTP. The results of the HSS review will, of course, be shared with the Board upon its completion.

I hope this clarification is helpful. We are enthusiastic about our work toward the shared goal of safety excellence throughout the DOE complex. Given the importance of this issue, I hope you will continue to work closely with Deputy Secretary Poneman as we strengthen our efforts to promote a strong safety culture at WTP and across the DOE complex.

Sincerely,

Steven Chu

Peter S. Winokur, Chairman
Jessie H. Roberson, Vice Chairman
John E. Mansfield
Joseph F. Bader

DEFENSE NUCLEAR FACILITIES SAFETY BOARD
Washington, DC 20004-2901

October 13, 2011

The Honorable Secretary Chu
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Chu:

In our letter of August 12, 2011, the Defense Nuclear Facilities Safety Board (Board) alerted you to our concern that the Department of Energy (DOE) may not fully understand the intent of the Board's Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant* (WTP). The seriousness of our concerns compelled us to ask for clarification to better understand the "gap" between the Board's and DOE's evaluation of the weaknesses/flaws in the safety culture at the WTP. The Board appreciates your acceptance letter, dated September 19, 2011, and the efforts DOE is making to close that "gap." At this time, the Board believes all interests will be best served by careful evaluation of DOE's Implementation Plan for the recommendation.

As we communicated in Recommendation 2011-1, the Board believes it is vital to the success of the project that the Secretary assert federal control at the highest level and direct, track, and validate the specific corrective actions to be taken to establish a strong safety culture within the WTP project, consistent with the objectives of DOE Policy 420.1, *Department of Energy Nuclear Safety Policy*. The Board is encouraged by your statement that your contractor's activities, such as the Safety and Quality Culture Assessment Team, are not a substitute for DOE-directed reviews. The Board remains interested in the progress and findings of recent, ongoing and future safety culture assessments, including those evaluating the extent of condition across the complex, and those specific to WTP being performed by DOE's Office of Health, Safety and Security. And, of course, the Board looks forward to receiving your Implementation Plan.

Sincerely,

Peter S. Winokur, Ph.D.
Chairman

c: Ms. Mari-Jo Campagnone