



Department of Energy  
Office of Science  
Washington, DC 20585

NOV 24 2014

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

Dear Mr. Chairman:

This letter is to inform you that the Department of Energy Office of Science (SC) has completed Action 2-13 for SC of the Department's Implementation Plan for Defense Nuclear Facilities Safety Board (Board) Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant*.

The deliverable for Action 2-13 is associated with the approval of site-specific safety culture sustainment tools for defense nuclear facilities which is shown in the enclosure. The Office of Science has a single defense nuclear facility, Building 325 at PNNL.

If you have any questions, please contact me at (202) 586-5434.

Sincerely,

A handwritten signature in black ink, appearing to read "Joe McBrearty", written over a large, stylized circular flourish.

Joseph A. McBrearty  
Deputy Director for Field Operations  
Office of Science

Enclosure

cc:

S. Short, SC-3  
C. Sohn, SC-3/PNSO  
R. Snyder, PNSO  
J. Erickson, PNSO  
T. Pietrok, PNSO  
J. Christ, PNSO  
D. Sigg, AU 1.1  
J. Hutton, EM-40





Department of Energy  
Office of Science  
Washington, DC 20585

NOV 24 2014

MEMORANDUM FOR ROGER SNYDER  
MANAGER, PACIFIC NORTHWEST SITE OFFICE

FROM: JOSEPH A. MCBREARTY *James J. MCBrearty* 11/29/14  
DEPUTY DIRECTOR FOR FIELD OPERATIONS  
OFFICE OF SCIENCE

SUBJECT: Approval of Safety Conscious Work Environment Plans

In conjunction with the DOE 2011-1 Implementation Plan commitment 2-13, I am approving both the Pacific Northwest National Laboratory (PNNL) and the Pacific Northwest Site Office (PNSO) Safety Conscious Work Environment (SCWE) Plans (see Attachment) which define the tools to improve safety culture. Please advise me if actions are not completed per the dates in either of the plans. I appreciate the time and efforts both PNSO and PNNL have dedicated to improving the safety culture at their respective organizations.

Please contact me at (202) 586-5434 or Carol Sohn of my staff at (509) 375-2320 if you have any questions regarding this information.

Attachment:

Memorandum from J. Erickson to J. McBrearty, *Resubmittal of Safety Conscious Work Environment (SCWE) Sustainment Plans*, dated September 30, 2014

cc:

C. L. Sohn, SC-3  
J. Hutton, EM-40,  
D. Sigg, AU-1.1





**Department of Energy**  
Pacific Northwest Site Office  
P.O. Box 350, K9-42  
Richland, Washington 99352

SEP 30 2014

14-PNSO-0345

MEMORANDUM FOR JOSEPH A. MCBREARTY  
DEPUTY DIRECTOR FOR FIELD OPERATIONS  
OFFICE OF SCIENCE, SC-3, HQ

FROM: JULIE K. ERICKSON  
ACTING MANAGER

A handwritten signature in blue ink, appearing to read "Julie K. Erickson", is written over the printed name and title.

SUBJECT: RESUBMITTAL OF SAFETY CONSCIOUS WORK  
ENVIRONMENT (SCWE) SUSTAINMENT PLANS

Attached is the resubmittal of the Pacific Northwest National Laboratory (PNNL) and PNSO SCWE Plans that were previously sent on September 15, 2015. This submittal now contains completion dates for improvement actions noted in the PNSO Plan section *4.0 Approach and Schedule for Implementation of the Tools/Activities*.

If you or your staff have any questions, please contact Carrie Swafford-Bennett, PNSO SCWE Lead, at (509) 372-4014.

Enclosure

cc w/encl:  
C. L. Sohn, SC-3



U.S. DEPARTMENT OF  
**ENERGY**

Pacific Northwest  
Site Office

# Pacific Northwest Site Office Safety Culture Sustainment Plan

September 2014





## Summary

PNSO's Safety Culture Sustainment Plan was developed in accordance with the Department of Energy's (DOE's) Implementation Plan for DNFSB Recommendation 2011-1. Action 2-12 of this plan requires each site to "*submit proposed site-specific safety culture sustainment tools to PSOs for approval*".

Overall, PNSO has mechanisms in place to foster a sustained Safety Conscious Work Environment. The Site Office tools and processes provide an integrated approach to monitoring implementation of the four themes: leadership, risk management, engagement, and continuous improvement. Safety culture attributes based on DOE G 450.4-1C Integrated Safety Management System Guide Attachment 10, *Safety Culture Focus Areas and Associated Attributes* are embedded into the four themes. Each year we identify strengths and weaknesses as well as associated actions to improve performance. The plan includes tools and activities that are in place as well as actions intended to improve or sustain our performance culture in the areas of leadership, employee/worker engagement, and organizational learning.



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## 1.0 Introduction

### 1.1 Purpose

The purpose of this plan is to meet the requirements of the DOE 2011-1 Implementation Plan, Action 2-12, which requires each site to “*submit proposed site specific safety culture sustainment tools to the DOE Program Secretarial Offices for approval.*” This plan contains the safety culture sustainment tools and actions for the Pacific Northwest Site Office and DOE Office of Science

### 1.2 Background

In May 2013, an evaluation of the Pacific Northwest Site Office (PNSO) and the DOE Office of Science (SC), SC-3, Safety Conscious Work Environment (SCWE) was conducted following the SCWE Self-Assessment Guidance (Revision G) issued by the U.S. Department of Energy (DOE) in response to the Defense Nuclear Safety Board (DNFSB) Recommendation 2011-1. Although the DNFSB commitment was limited to the Laboratory’s Hazard Category 2 Defense Nuclear Facility, the Radiochemical Processing Laboratory (RPL), PNSO chose to assess the culture holistically with an emphasis on the nuclear facility. Due to the limited number of Headquarters individuals directly associated with oversight of the RPL, only those individuals in SC-3 specifically associated with the oversight of Building 325 were included.

The review, which included both organizations, found an overall strong (SCWE) with some areas for improvements noted. Corrective actions for improvements identified are documented in section 4.0 of this plan. Strengths included worker engagement, accountability, and efforts to improve health and safety.

Over the past year all of PNSO management has participated in the SCWE Training conducted by the DOE Office of Health Safety and Security. Management presented the tenants of this training to all staff.

As a follow-on to the assessment efforts, Joseph McBrearty, the Deputy Director for Field Operations (DDFO) for the Office of Science, visited the Laboratory to lead a town hall meeting on August 26, 2014. Mr. McBrearty is responsible for ensuring that the infrastructure and management systems are in place at ten National Laboratories to enable the science missions to succeed. The meeting reinforced PNSO and SC commitment to establishing an environment within the Office of Science that promotes trust, a questioning attitude and receptiveness to raising safety and technical issues. Approximately 200 individuals attended the PNNL/PNSO town hall meeting in the Battelle auditorium. Three PNNL conference rooms also had video feed of the meeting (for individuals without access to a computer) in addition to individual personal computer link capability.

The DDFO and Acting PNSO Manager also met with PNSO employees. The Acting PNSO Manager discussed what issues had been identified and actions taken by PNSO relative to safety culture. The top five core values (accountability, teamwork, innovation, integrity and respect) for PNSO were presented by PNSO management to all attendees. The DDFO discussed three of the core values that resonated with him and are directly related to maintaining a SCWE (integrity, accountability and respect). The DDFO emphasized the importance of management spending more time “on the deck plate”. He concluded his presentation with a discussion on individual accountability.





## 2.0 Safety Culture Sustainment Process

### 2.1 Annual ISM Maintenance and Improvement Processes

PNSO is committed to a strong and sustained safety culture, which includes a Safety Conscious Work Environment (SCWE). Integrated Safety Management serves as a touchstone of our safety programs. PNSO systematically integrates safety into our management and work practices. An integral part of this is the PNSO ISM Program.

The PNSO Integrated Safety Management (ISM) Program Description serves as a safety road-map for the organization and fulfills the requirement stated in DOE O 450.2 for development and approval of a field office ISM system description. This document describes the integrated processes used by PNSO to meet the principles and functions of ISM and to ensure safety is integrated into all work activities. The objective of the Description is to provide an understanding of the processes used to fulfill ISM principles and functions while also describing the integrated approach for managing and assessing safety performance and making improvements.

As a part of sustaining safety, an annual ISM self-assessment is conducted and the performance objectives, measures, and commitments (POMCs) are updated. The POMCs are documented and tracked through the PNSO Annual Performance Plan (APP). The PNSO FY 2014 objectives were derived from a top-down analysis of the Department's Strategic Plan and overall SC and DDFO Goals intersected with a bottom-up analysis of risks and continuous improvement opportunities, both residual and emerging, as identified by the Site Office. This approach enables PNSO to actively manage and adjust resources as necessary to mitigate risks and maximize opportunities, as well as to identify and mitigate any emerging safety culture issues.

## 3.0 Overview of Tools and Activities to Sustain Safety Culture

A summary of the tools/activities used by PNSO/SC is provided in the following table along with how they align with the safety culture elements of leadership, employee engagement, and organizational learning. As depicted in the table, there is a wide variety of tools/activities that are used and they align well with safety culture elements.



**Table 1. Alignment of Tools/Activities Used in PNSO Operational Excellence and Safety Culture Elements**

Operational Excellence Tool/Activity	Safety Culture Elements		
	Leadership	Employee Engagement	Organizational Learning
Annual Performance Plan	√	√	√
Staff Surveys	√	√	√
Periodic Self Assessments	√	√	√
FEOSH Program	√	√	√
Sustainability Program	√	√	√
Wellness Program	√	√	√
Periodic Independent Reviews			√

### 3.1 Leadership

PNSO believes- *“Safety Culture is an organization’s values and behaviors modeled by its leaders and internalized by its members, which serve to make safe performance of work the overriding priority to protect the workers, public, and the environment.”* PNSO Management is committed to providing a safe and healthy workplace. The protection of the public, the workers and environment through safety management is a primary responsibility of DOE line management. PNSO Leadership provides the resources and tools to accomplish work safely. The following tools and activities are used by leadership to improve and sustain the safety culture of PNSO.

#### 3.1.1 Operational Excellence Survey

This survey was developed and launched to gather feedback for SC employees about the operational culture of the organization. The methodology was standard survey techniques. The survey aided in understanding the perceptions related to behaviors of interest from a broad sample of individuals from within the organization. This survey will be conducted on an annual basis to aid in sustaining a culture of operational excellence.

#### 3.1.2 Annual Federal Employees Viewpoint Survey

The Federal Employee Viewpoint Survey is issued by the Office of Personnel Management annually to all federal agencies. The 98-item survey includes 84 items that measure how effectively agencies manage their workforce. The survey is grouped into eight topic areas: personnel work experiences, work unit, supervisor/team leader, leadership, satisfaction, work life programs and demographics.



### 3.1.3 PNSO Values Survey

PNSO management is committed to creating a workplace and organization that has good internal operations and working relationships. The objective of the PNSO Values Survey was to aid in identifying important values to enable better communication. This survey was valuable in creating actionable steps to improve upon communication within the Site Office. The results from the survey were incorporated into the PNSO Annual Performance Plan (APP) for management attention. PNSO plans to conduct this survey annually.

### 3.1.4 Training

Competency is very important in maintaining a good safety culture. A learning culture as well as highly trained and rewarded staff are some of the recognized attributes PNSO has in regards safety culture. The Office of Science and the Site office have tools in place to support a working environment conducive to learning and growing individuals. The PNSO follows the procedures identified in the Office of Science Management System (SCMS) Subject Area on *Employee Development* to maintain a systematic process that facilitates identification of training needs, execution of training activities, tracking of training records, and assessment of training performance. Identification of training needs are accomplished through annual development of Individual Development Plans (IDPs) in accordance with the SCMS *Preparing IDPs* Procedure. Training requests, authorizations, and recordkeeping are accomplished using the Corporate Human Resources Information System (CHRIS) consistent with the SCMS *Employee Training Requests* Procedure. Assessment of training performance is accomplished through Annual PNSO self-assessment and performance management activities as well as through the PNSO Individual Performance Plan appraisal process.

A number of PNSO personnel are currently assigned as subject matter experts and provide oversight of PNNL management systems in support of the PNSO Contracting Officers. Many of these personnel have previously completed qualification requirements under the DOE General Technical Base (GTB) Qualification Standard and/or the DOE Functional Area Qualification Standards (FAQS), as part of DOE qualification programs. Staff generally maintain proficiency through continuing training and experience on the job, consistent with approved IDPs. Some of these personnel have been assigned additional responsibilities associated with making specific decisions related to DOE liabilities and risks (e.g., nuclear facility safety-basis decisions, contract decisions, funding decisions, etc.). In these cases, those personnel have been specifically identified and assigned to complete a qualification under the DOE SC Technical Qualification Program (TQP) or DOE Acquisition Career Development Program (ACDP).

## 3.2 Employee Engagement

Open communications and team work are foundational to the PNSO organization and our culture. Staff members are involved in decisions, processes and activities on a daily basis that affect their work and contribute to the culture of the organization. Staff are encouraged to participate and provide their perspectives without fear of retribution. PNSO staff participation on committees/forums, reviews, and assessments has been instrumental in creating an open and healthy dialogue on staff concerns and improvement opportunities. The following staff engagement tools and activities are used to improve and sustain operational culture of the Site Office and contribute to an overall positive culture within PNSO.



### **3.2.1 Wellness Program**

The DOE PNSO promotes a healthy and productive work environment. The Wellness program is one of the ways we maintain such an environment. The PNSO Wellness Program focuses on building and maintaining a healthy workforce. PNSO's Federal Employee Health Club process provides for participation in health club and reimbursement of health club individual membership dues as part of the PNSO Health and Wellness Program. Since 2004, PNSO management have provided a subsidy for Federal employees participating in health clubs. PNSO employees participating in the PNSO Federal Employee Health and Wellness Program via membership in a local health club are strongly encouraged to utilize the chosen facility at least two (2) times weekly unless otherwise advised by a physician.

### **3.2.2 DOE-PNSO Federal Health and Safety Committee (FSC)**

The PNSO Federal Health and Safety Committee was established to assist management in providing, promoting, and developing an organizational culture that encourages a safe and healthful work environment and practices by staff. This committee assists in implementing the PNSO Federal Employee Occupational Safety and Health (FEOSH) Program (PNSO-GUID-07) and at the same time helps maintain channels of communication of safety and health issues within the organization. The committee evaluates the effectiveness of the program per Executive Order 12196, Section 1-3 and 29 CFR 1960.

The FSC consists of one or more representatives from PNSO's Laboratory Stewardship Division, Operations Division, Administrative Team, and Senior Management. Committee Duties are as follows:

- Participate in internal supervisor or safety and health inspections at the work site(s);
- Participate in PNSO FEOSH program evaluations conducted by external entities or internally;
- Track Corrective Actions to ensure appropriateness and timeliness;
- Monitor program effectiveness and make improvement recommendations;
- Recommend changes to Senior Management on program policy, management commitment in terms of resources, and staff involvement. Participate in safety and health awareness programs
- Develop Safety Topics to discuss at All-Hands Meetings
- Provide and Maintain all FEOSH resources, including PNSO Employee PPE

The FEOSH POC schedules inspections, tracks abatements and their results, and targets safety and health activities in high-risk or identified problem areas. The FSC also participates in the annual FEOSH inspection, as appropriate.

### **3.2.3 Sustainability Program**

PNSO employees are expected to make every reasonable effort to reduce the amount of solid waste they generate, recycle materials recoverable from their activities, maximize the procurement of recycled, energy efficient, and non-toxic products, and reduce the generation of greenhouse gases (GHG). PNSO actively encourages and applies these expectations to the greatest practical extent.



## FY2014 PNSO Sustainability Objectives

1. Reduce Waste:
  - a. Reduce paper usage.
  - b. Reduce waste at PNSO sponsored activities. (i.e., PNSO picnic, Holiday Parties, PNSO potluck, Bring child to work day, DOE-REC Events, etc.)
  - c. Procure sustainable products.
2. Raise PNSO Staff Awareness:
  - a. Present sustainability topics/updates at all hands meetings.
  - b. Conduct annual PNSO questionnaire to gather information and suggestions.
  - c. Monitor sustainable behaviors among staff and provide recommendations for recognition.
3. Reduce Greenhouse Gas Production:
  - a. Support teleworking among PNSO staff.
  - b. Reduce PNSO related travel mileage via local training and video conferencing.

## 3.3 Organizational Learning

PNSO accomplishes feedback and improvement in a variety of ways. PNSO develops an Annual Performance Plan (APP), which identifies performance goals and expectations for key PNSO Focus Areas. The performance of the Site Office against these focus areas is documented in the Annual Assessment Report and is utilized as the main feedback and improvement mechanism for PNSO. One of the focus areas is concentrated on PNSO performance confirmation and contains performance indicators for planning, conducting, and analyzing performance confirmation results. PNSO conducts periodic program reviews to report performance, determine concerns, emerging issues, and recommended actions. Actions identified during performance reviews or assessments are formally tracked to closure in the PNSO Performance Assurance Reporting Tool, including actions from the aforementioned culture surveys. The following staff engagement tools and activities are used to improve and sustain operational culture of the Site Office.

### 3.3.1 PNSO Annual Performance Plan

The PNSO Annual Performance Plan (APP) serves as the blueprint for the PNSO activities necessary to address SC corporate priorities, administer the PNNL contract, and strengthen our overall organization. The APP lays out our strategy to fulfill our commitments to the Office of Science, to the PNNL Contractor, those who utilize PNNL, to each other, and to ourselves.

The APP is used as the principal mechanism for planning and tracking Site Office activities and, although not all inclusive of the activities required of the office, it provides a basis for efficiently and effectively measuring and reporting Site Office performance. The PNSO goals reflect our commitment to directly contribute to the successful execution of the Office of Science Deputy Director of Field Operations (DDFO) and overall Department goals and are reinforced by management principles and values that have matured at PNSO over time. These principles provide the performance-based framework that enables continuous improvement in mission execution through increased transparency and collaboration, shared accountability, and clear performance expectations.



The APP creates linkage between the DDFO and DOE goals and the PNSO objectives while providing a systematic and efficient way of tracking performance. The PNSO Strategic Goals for FY 2014 are provided below and are consistent with the DOE Mission, the SC Goals, and the PNSO Vision and Values. The goals are implemented through their associated objectives and measures.

- **Goal 1 – *Achieving Organizational Success through our People.***
- **Goal 2 – *Stewarding Our National Asset to Enable Scientific Discovery.***
- **Goal 3 – *Actively Manage the Contract.***

The PNSO FY 2014 objectives were derived from a top-down analysis of the Department's Strategic Plan and overall SC and DDFO Goals intersected with a bottom-up analysis of risks and continuous improvement opportunities, both residual and emerging, as identified by the Site Office. The risk-based focus enables PNSO to actively manage and adjust resources as necessary to mitigate risks and maximize opportunities. Detailed performance measures have been developed to facilitate the measurement of Site Office progress in mitigating risk and accomplishing the objectives. Although the identified measures may be the primary means for defining performance, additional performance information that is available to the Site Office from other sources may be utilized to manage resources, mitigate issues and risks, and determine the overall success in meeting an objective.

### **3.3.2 Assessments and Performance Management**

Performance of Assessments and Performance management activities are instrumental in PNSO's understanding and promoting a strong safety culture at PNNL, and in identifying performance related to safety culture, and making sure improvements are appropriately identified and accomplished.

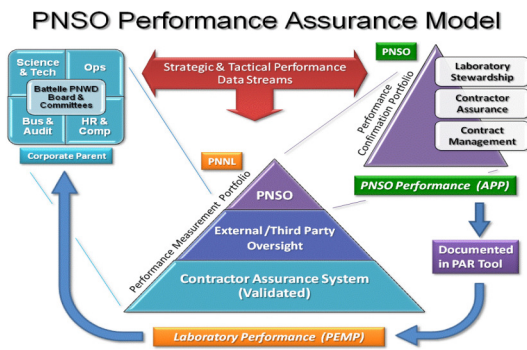
PNSO's system-based approach and processes for performing contract management are aligned with the Office of Science guidance and the Contractor's Integrated Management System that defines how work is done at the Pacific Northwest National Laboratory (PNNL).

The foundation of PNSO's Performance Assurance Program is partnership with the Contractor in developing goals, evaluating performance and making course corrections to improve the Contractor's ability to manage and operate the Laboratory.

PNSO performance confirmation activities are consistent with the Line Management Oversight Program Description within the SC Quality Assurance and Oversight Management System.



The PNSO Performance Assurance Model is consistent with the Contractor Assurance



System (CAS) contract clause which requires the contractor to provide assurance to the government that it has the systems and controls in place to deliver the laboratory’s mission safely, efficiently and effectively. PNSO relies on the Contractor’s Assurance System to deliver the performance based information required for PNSO to evaluate contractor’s mission,

management and operating outcomes.

To ensure safe operations and mission success, PNSO meets periodically to conduct Program Reviews to evaluate performance of the Contractor against PEMP objectives and also to measure performance of the Site Office against established objectives. A collaborative process with a cross-functional group structure is utilized to collect, review, discuss, and document and share performance information with the Site Office and where appropriate, provide feedback to the contractor.

### 3.3.3 PNSO High Liability/Risk Assessment Group (PHLAG)

The PHLAG promotes organizational learning by creating the synergy needed to accomplish the goal of identifying/evaluating PNNL proposals/projects and recognizing those which contain activities that challenge/exceed the customary risk envelope and have the potential to create detrimental DOE liability. The PHLAG is multidisciplinary forum that integrates across the Pacific Northwest Site Office (PNSO) organization to include the Environmental, Safety, Security Health & Quality Team, Facilities and Operations Team, Laboratory Capability Stewardship Team, and the Business and Organization Systems Team. This group models teamwork and learning across the organization.

### 3.3.4 Periodic Independent Reviews

Periodic independent reviews that are performed by DOE oversight organizations such as HSS, IG, and GAO are reviewed in detail by PNSO to identify opportunities for improvement. These reviews have proven to be instrumental in organizational growth and learning.



#### 4.0 Approach and Schedule for Implementation of the Tools/ Activities

As noted in this Sustainment Plan, PNSO has many implementation tools in place to help monitor the health of our safety culture. The output /integration of PNSO’s tools support the Site Office goals in meeting the four themes of: leadership, risk management, engagement, and continuous improvement. The following improvement opportunities were identified through the PNSO SCWE Self-Assessment and will be tracked to completion via the PNSO Annual Performance Plan.

Theme	Primary Opportunities for Improvement	Action/Completion Date
Leadership	<p>Many of the Employee Concerns Programs requirements were not adequately implemented.</p> <p>Background: Documentation review revealed gaps in implementing the requirements in DOE Order 442.1A Department of Energy Employee Concerns program.</p>	<p>Action: Review the Employee Concerns Program for translation and implementation of requirements; to be completed by April 30, 2015.</p>
Engagement	<p>Staff sentiment indicated a significant number of staff felt disconnected from the self-development process.</p> <p>Background: Survey results indicated a significant number of staff felt disconnected from the self-development process. Five out of eighteen PNSO staff responses to the FEV survey were either neutral or negative to the statement that they are given an opportunity to improve their skills within the organization.</p>	<p>Action: Provide all staff with opportunities for self-development as part of PNSO human capital planning processes; to be completed by April 30, 2015.</p>





PNSO  
SAFETY CULTURE SUSTAINMENT PLAN

PNSO-PLAN-08

SCWE Town Hall	<p>Lessons Learned Identified</p> <p>Background: Lessons Learned were identified as a result of the SCWE town hall discussion and process held on August 26, 2014.</p>	<p>Action: Review the Town Hall report submittal for follow-up and closure plan by 1<sup>st</sup> quarter of FY-15.</p>
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**Pacific Northwest**  
NATIONAL LABORATORY

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# Safety Culture Sustainment Plan

**September 2014**



Prepared for the U.S. Department of Energy  
under Contract DE-AC05-76RL01830



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# **Safety Culture Sustainment Plan**

September 2014

Prepared for  
the U.S. Department of Energy  
under Contract DE-AC05-76RL01830

Pacific Northwest National Laboratory  
Richland, Washington 99352



# Summary

PNNL's Safety Culture Sustainment Plan was developed in response to DNFSB Recommendation 2011-1 implementation plan, Action 2-12, which requires each site to “*submit proposed site-specific safety culture sustainment tools to PSOs for approval*”.

Overall, PNNL has mechanisms in place to foster sustained improvement for Operational Excellence which includes safety culture. The annual PNNL Operational Excellence Evaluation provides an integrated approach to monitoring implementation of the four themes: leadership, risk management, engagement, and continuous improvement. Safety culture attributes based on DOE G 450.4-1C Integrated Safety Management System Guide Attachment 10, *Safety Culture Focus Areas and Associated Attributes* are embedded into the four themes. Each year the evaluation identifies strengths and weaknesses as well as associated actions to improve performance. The plan includes tools and activities that are in place as well as actions intended to improve or sustain our performance culture in the areas of leadership, employee/worker engagement, and organizational learning.



## Acronyms and Abbreviations

CBP	Core Business Process
COO	Chief Operating Officer
CSM	Cognizant Space Manager
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
DSOC	Directorate Safety Operations Council
EFCOG	Energy Facility Contractors Group
ES&H	Environment, Safety, and Health
HDI	How Do I? - PNNL's Standards-Based Management System
IMS	Integrated Management System
ISM	Integrated Safety Management System
ISO	International Organization for Standardization
LL	Lessons Learned
LSOC	Laboratory Safety and Operations Council
M&O	Management and Operations
NNSA	National Nuclear Security Administration
OE	Operating Experience
OSHA	Occupational Safety and Health Administration
PEMP	Performance Evaluation and Measurement Plan
PNNL	Pacific Northwest National Laboratory
PM	Project Manager
SCWE	Safety Conscious Work Environment
SME	Subject Matter Expert
TGM	Technical Group Manager
VPP	Voluntary Protection Program

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# 1.0 Introduction

## 1.1 Purpose

The purpose of this plan is to meet the requirements of U.S. Department of Energy (DOE) 2011-1 Implementation Plan, Action 2-12, which requires each site to “*submit proposed site-specific safety culture sustainment tools to the DOE Program Secretarial Offices for approval.*” This plan contains the safety culture sustainment tools and actions for the Pacific Northwest National Laboratory (PNNL).

## 1.2 Background

Over the years, the management of Environment, Safety, and Health (ES&H) programs at PNNL has evolved from a compliance-based inspection focus brought on by the Occupational Safety and Health Administration (OSHA) Act in the 1970s, to a desire to prevent workplace injuries. Procedures, training, and tools have been established and continuously improved to increase awareness, reduce risk, and assure compliance. These traditional ES&H program elements, although valid and necessary, were not by themselves sufficient to achieve excellence in an organization. The validation of integrated safety management (ISM) in 1998 and adoption of the voluntary protection program (VPP) in 2001 broadened the engagement of the workforce, combining management commitment and employee involvement, and further driving improvements in safety performance.

In FY 2010 PNNL implemented an innovative, holistic process to understand cultural attributes and improve operational performance through the lens of workforce engagement. This synergistic approach integrates VPP, ISM, and International Organization for Standardization (ISO) 14001 principles into a single set of organizing principles that address the hearts, minds, and actions of staff members and provide a single platform for continuous improvement that enables enhanced mission execution through *operational excellence*.

PNNL’s vision of operational excellence is that ES&H functions will be embedded into the Laboratory’s business processes and universally adopted. Looking beyond “safety programs” or “environmental programs,” PNNL’s intention is to excel in engaging all levels of operational management, resulting in outstanding research and development, while maintaining our commitment to safety, health, and environmental stewardship. In addition to establishing a strong ES&H culture, operational excellence also means the following:

- We serve every customer with distinction.
- We do not compromise the quality of our research, products, or reputation.
- Every staff member adheres to the highest levels of ethical, moral, and professional conduct.

### 1.3 Annual Operational Excellence Evaluation Process

PNNL's Credo for Operational Excellence defines the desired cultural attributes and is the basis for the measurement and analysis contained in this evaluation. The Credo focuses on four themes: leadership, risk management, continuous improvement, and engagement. The objectives of these themes align well with the tenets and sub-elements of VPP as well as the elements of ISM and ISO 14001. A summary of combined key surveys and associated contractor assurance processes is used in the development of observations and actions. Performance indices were developed for all four themes, and goals for each index were set to distinguish outstanding and world-class performance for quantitative measures as shown in Figure 1.1.

The evaluation includes all levels of workers (e.g., management, project management, researchers, and bargaining unit personnel) to enhance employee involvement in the process. The holistic approach of evaluating operational excellence is continually improving. Each year the process is improved to expand data inputs, strengthen the indicators, and mature the analysis. Strengths and weaknesses associated with each theme are identified along with actions to improve. The process for evaluating operational excellence was expanded to include safety-conscious work environment elements in 2013.

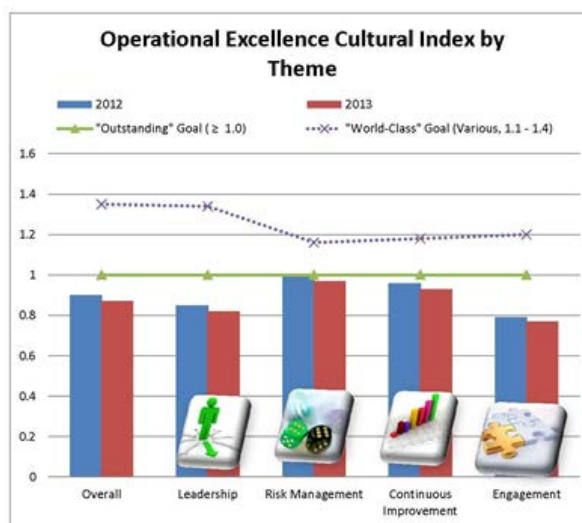
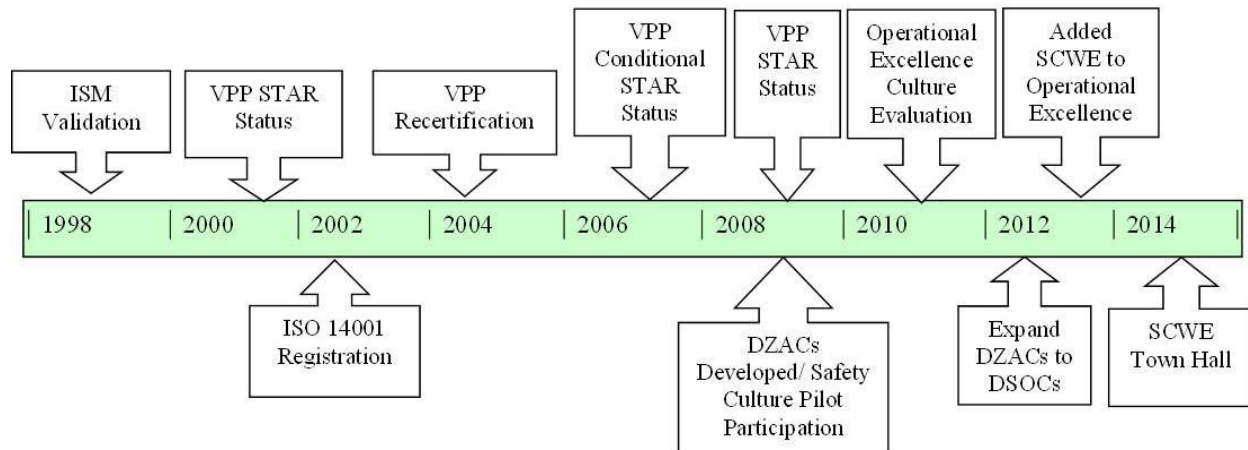


Figure 1.1. Operational Excellence Cultural Index

In addition to the commitment to continually improving the evaluation process, PNNL has actively participated in the Energy Facility Contractors Group (EFCOG) and currently serves as the co-chair for the safety culture subgroup.

In 2007 PNNL participated on a team of senior leaders representing major DOE and National Nuclear Security Administration (NNSA) contractors, subject matter expert advisors, and DOE and NNSA personnel that identified a consensus set of safety culture principles, along with implementation practices and participated in a safety culture pilot in 2008. Since then, PNNL has been actively working with the DOE and other contractors to develop self-assessment guidance, conduct safety conscious work environment (SCWE) training, and share lessons learned. The timeline below in Figure 1.2 provides a summary of key events associated with maturing safety culture at PNNL.



**Figure 1.2.** Operational Excellence Timeline

## 2.0 Overview of Tools/Activities by Safety Culture Element

PNNL uses various tools/activities to implement and assess safety culture across the elements of leadership, employee engagement, and organizational learning. This section provides a brief description of the key tools/activities used. Since many of the tools/activities are used to address more than one safety culture element, Table 2.1 shows the alignment of the tools/activities to the safety culture elements.

**Table 2.1.** Alignment of Tools/Activities Used in Operational Excellence and Safety Culture Elements

Operational Excellence Tool/Activity	Safety Culture Elements		
	Leadership	Employee Engagement	Organizational Learning
Annual Operational Excellence Evaluation	√		√
LSOC/DSOC	√	√	√
Training	√	√	√
Predictive Modeling	√		√
Hazard Specific Safety Committees	√	√	√
Wellness Program		√	
VPP Picnic		√	
Student Roadshow	√	√	√
Safety and Health Expo			
Lessons Learned	√	√	√
Battelle Communities of Practice	√		√
Performance Management	√		√
VPP Triennial Review			√

### 2.1 Leadership

PNNL management is committed to providing a safe and healthy workplace. Management expectations are key components of safety management and operational excellence. Line management expects all work to be performed in a safe manner. Leaders provide the Laboratory’s strategic focus and plan the necessary

resources and training to support that effort, thus creating a work environment where priorities are balanced. Within this balanced work environment, line management and workers prioritize their tasks based on Laboratory goals. The following tools and activities are used by leadership to improve and sustain the operational culture of the Laboratory.

### 2.1.2 Operational Excellence Evaluation

The annual operational excellence evaluation described in section 1.3 provides management a process to monitor, assess, and continuously improve PNNL's safety culture. Methods used to evaluate culture include interviews, focus groups, and staff surveys. The evaluation is reviewed with senior management and improvement actions are tracked.

- Staff surveys are used to collect feedback from staff members throughout the year. Survey data is analyzed and results are communicated to the staff via line management, websites, and electronic communications. The three primary surveys are used to collect data relative to operational excellence.
- Interviews include various levels of the staff and management cutting across operations, support, projects, and the nuclear facility. Identified personnel are individually scheduled for interviews and asked questions based on their roles and responsibilities associated with safety culture attributes.
- Typically, a series of three focus group discussions are held to support the annual evaluation. Focus group sessions are conducted representing equivalent roles: cognizant space managers (CSMs), support staff members, and bargaining unit employees. The group size ranges from seven to eleven participants and sessions are scheduled for 90 minutes.

### 2.1.3 LSOC/DSOC

Several years ago, Laboratory leadership established Directorate Safety Operations Councils (DSOCs) to provide an open forum for employees and managers to raise and resolve safety and operational challenges. The goal of DSOCs is to improve performance through communications, staff/management interactions and participation, and increased awareness. Senior management is also engaged via the Laboratory Safety and Operations Council (LSOC), where DSOC personnel, VPP representatives, and senior management meet to evaluate Laboratory-wide issues and reach strategic resolutions. DSOCs are highly valued and continue to generate outcomes that include a wide range of Laboratory operations/safety improvements for work and home. The robust collection of lessons learned and operating experience information available to the staff further enables solid ES&H practices. For example:



- Recently at an LSOC meeting the Associate Laboratory Director for the Operational Support Directorate led a discussion with the research directorates on “The safe conduct of research” based on principles for a strong safety culture developed by the Battelle Operations Council.
- Staff members’ concerns raised through DSOCs have led to improvements in pedestrian safety (e.g., crosswalks/parking), campus egress lighting, and foreign travel safety (e.g., availability of medical treatment).

### **2.1.1 Training**

Competency-building activities are systematically planned and incorporated into recruiting and professional development activities. PNNL creates descriptions to identify minimum competence for each position commensurate with responsibilities. Individual electronic training plans are developed and tracked based on required training and professional growth goals. Several positions also require qualification cards to maintain necessary technical expertise and assure that staff members have the knowledge, skills, and abilities to perform assigned work. Training content is periodically reviewed and content is refreshed to incorporate changes and lessons learned.

Current efforts to strengthen training relative to safety culture include: 1) embedding the “operational excellence” concept into all-staff online refresher training; 2) adoption and communication of the Battelle “Safe Conduct of Research” publication; and 3) the rollout of Laboratory Operations Supervisor Academy Training that is designed to develop first-line supervisors’ skills, including elements of a strong safety culture.

### **2.1.1 Predictive Modeling**

PNNL has developed an innovative predictive model to identify work groups that have the highest potential for future safety- and security-related incidents. Inputs to the model focus on data associated with three key variables: exposure to severe hazards, staff-member engagement, and past operational experience. The model predicts the number of future incidents in each workgroup and identifies higher-risk workgroups. Information specific to high-risk workgroups is provided to the directorate chief operating officers semi-annually. Directorates evaluate the information to better understand the factors that are driving risk within specific workgroups. The information has been used to plan assessments, mentor existing managers, orient new managers, provide additional context to retroactively understand incidents, and monitor progress of actions taken to reduce risk.

## **2.2 Employee Engagement**

Staff members are routinely involved in the decision processes that affect their work, such as hazard analysis, accident investigation, health and safety training, self-assessments, program evaluations, and problem resolution. In addition to routine assessments, corrective actions, employee concerns, lessons learned feedback mechanisms, staff and management forums (such as the LSOC/DSOC) have been established to create dialogue/feedback between both groups to address worker environmental, health and



safety concerns. The following staff engagement tools and activities are used to improve and sustain the operational culture of the Laboratory.

### 2.2.1 Hazard-Specific Safety Committees

Hazard-specific safety committees are an integral part of PNNL operations and serve a variety of purposes, including obtaining employee involvement, providing independent oversight and safety-related information, and recommending program improvement. For example, the Electrical Safety Committee provides a competent technical resource for resolution of electrical safety issues. Several other feedback mechanisms exist through the VPP program and other such venues, including job planning meetings and readiness reviews.

### 2.2.2 Wellness Program

The PNNL Wellness Program focuses on building and maintaining a healthy workforce dedicated to promoting PNNL’s research agenda. In general, workplace wellness programs are an organized effort intended to foster awareness, influence attitudes, and identify alternatives so that individuals can make informed choices and change their behavior to reach an optimal level of wellness. The goal of the program is to increase staff awareness and participation in activities that promote health and well-being. Examples of wellness program opportunities for staff engagement include:



- Wellness Challenges
- A farmer’s market on the campus one day per week during the summer months.
- A series of presentations/workshops aimed at the fundamentals of safe lifting, proper body mechanics, stretching to prevent injury, and healthy living.
- The “Weight Watchers at Work” program.
- The annual flu shot clinics.
- Mini health screenings consisting of blood pressure, body fat, and weight checks conducted around the campus each month through the occupational medical contractor AnovaWorks.
- On-site mammogram screening.

### 2.2.3 Health and Safety Picnic

The VPP program treats staff members to an annual staff appreciation picnic that bring employees together in an informal setting where they share food and are able to visit an array of exhibits that display information on safety trends, equipment, wellness, and sustainability. A free lunch is provided along with an array of information booths including



wellness, safe driving simulation, safety equipment, and sustainability. Staff members look forward to the annual picnic, which is used to thank them for a year of great safety performance. The picnic is also precedent-setting having become the first Laboratory event to achieve 97 percent zero waste, a distinction it has continued for two years.

## 2.2.4 Student Roadshow

Each year the Laboratory hosts a series of sessions called “roadshows” for summer students. Many of these students come from high school, undergraduate, and graduate programs and are at higher risk for injury because they have not learned the safe behaviors and expectations of a strong safety culture. The roadshows emphasize expectations for maintaining a questioning attitude, reporting concerns, requesting help whenever the student is unsure, and stopping work if necessary - if the student perceives a risk to himself/herself or to others. The aim of the roadshow is to foster open-door communication with PNNL staff members and to engage each student in PNNL’s operational excellence culture, thus cultivating values that will extend to the student’s home life, academic life, and future career settings. The student roadshows interactively involve leadership and staff members as students engage in one-on-one discussions with subject matter experts (SMEs) and each other. Mentors are also encouraged to attend roadshow with their students, demonstrating a commitment to operational excellence on the part of the mentor, and strengthening the mentor-student bond.



## 2.2.5 Health and Safety Expo

PNNL participates in the annual Health & Safety Expo that draws more than 65,000 people and 260 vendors each year. This is a great place for people of all ages to learn, share, and have fun. The Health & Safety Expo is about the value we place on life. Everything about our lives is dependent on how healthy we are in body, mind, and spirit.

PNNL joins work groups from the Hanford Site and the local community to share what they are doing to improve their performance in the safety and health areas. Vendors exhibit their safety- and health-related products and equipment and explain or demonstrate the proper way to use them.



Although themes for the PNNL booth have varied over the years, the most recent focus has been on distracted driving, which was awarded “Most Interactive” out of more than 200 booths. The booth uses two arcade games to demonstrate how quickly driving quality can decrease when using a phone as attendees try to drive the car on the virtual road and use their cellphone at the same time. The booth’s front table displays a looping video of accidents caused by distracted driving.

PNNL volunteers also hand out a 25-Point Home Safety Checklist and challenge families to conduct a home-safety checkup.

## **2.3 Organizational Learning**

Ongoing feedback and improvement is achieved in a variety of ways, including but not limited to: the Laboratory's annual improvement agenda that facilitates advancement of our strategic goals; the Operating Experience/Lessons Learned Program; formal performance reviews and monthly executive meetings with our DOE site office; the Event Reporting Program to track and analyze trends in off-normal incidents; the Laboratory's corrective action management and effectiveness evaluations; and our participation in Battelle Communities of Practice. The following organizational tools and activities are used to improve and sustain the operational culture of the Laboratory:

### **2.3.1 Lessons Learned**

The Laboratory learns from the experiences of others both inside and outside the organization and is actively engaged in Communities of Practice that share information and reinforce mutual learning. The OE/LL Program continues to be a strong driver of organizational learning. The value of OE/LL is well integrated into the Laboratory's processes. Articles are accessed by a large cross section of staff members, as evidenced by five years of strong growth in readership. During 2013, 90 percent of all staff members in the Laboratory accessed and read at least one article. Strong partnerships with line/program managers enable sharing of high-impact experiences and lessons across the Laboratory. In 2013, 87 percent of all PNNL-based articles were developed based on managers' desire to share the information and promote learning from others' experiences.

The OE Program continues to broaden the topical content and expand the pathways for staff members to access targeted lessons through How Do I? (HDI) work controls/workflows and through Laboratory training. During FY 2013, 24 percent of all access to OE/LL content came from a new Laboratory training pathway where staff members can link directly to lessons that help reinforce the specific training information. The OE/LL Program also hosts a DSOC website, which contains much of the Laboratory's safety-related information that is shared through DSOCs.

### **2.3.2 Battelle Community of Practice**

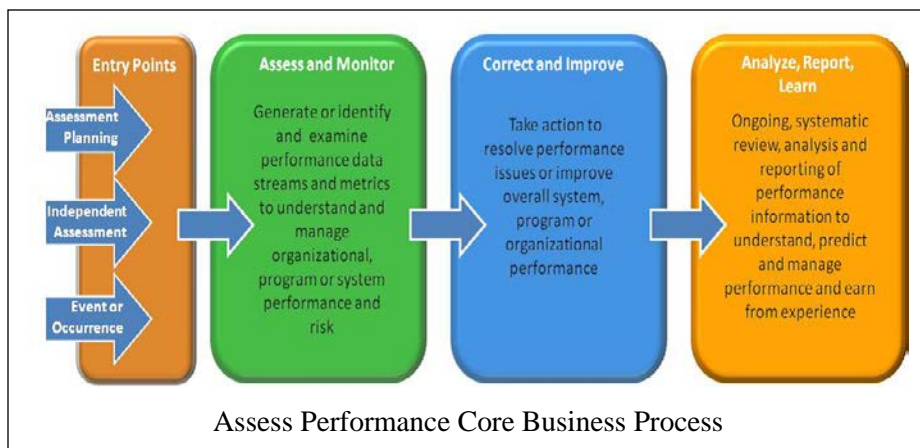
Sharing improvements and efficiencies among the other five Battelle-managed DOE national laboratories allows PNNL to leverage operating experience across the complex. For example, the Battelle Operations Council brings operational leadership together from multiple laboratories to share best practices and lessons learned, address crosscutting issues and performance needs, and respond to requests for assistance. In addition, Communities of Practice bring professional staff members in specific areas together to share best practices and generate new ideas, facilitate the joint development of systems and tools, assist with rapid response to issues across laboratories, and support the identification, recruitment, and development of experts and leaders. Both the EHS Community of Practice and the Integrated Performance Management Community of Practice have brought value to PNNL by: identifying and

addressing performance trends across the Battelle-managed laboratories; sharing lessons learned and operating experience; and developing and spreading new knowledge and productive capabilities; and fostering innovation.

### 2.3.3 Performance Assurance

Assessments, internal and external audits, and performance analysis data are used to evaluate compliance and effectiveness, predict performance to help prevent events/accidents, and drive continuous improvement. Management assessments are risk-based, planned activities conducted by PNNL line management in areas key to managing strategic, mission, operational, and business performance. Once strategic and performance goals are defined and articulated in the Laboratory Agenda, management assesses progress and effectiveness against the goals. Line management is responsible for assessing performance for the functions it owns and the Management and Operations (M&O) programs and core business processes (CBPs) that it stewards. Each line organization establishes comprehensive self-assessment measures that address both the efficiency and effectiveness of the service delivery for its functions.

Independent assessments are conducted by internal audit, independent oversight, and external entities focused on business, operations, and research and development work. Internal assessments are planned each year by addressing key areas of risk and performance. External entities include federal, state, and local agencies, DOE, certifying organizations (e.g., International Organization for Standardization [ISO]), and PNNL customers, who assess compliance and performance against standards, laws, regulations, and/or expectations/requirements applicable to PNNL.



Issues discovered as a result of an assessment, or an unplanned event or condition e.g., occurrence, are managed via a single integrated process. The basic steps in managing these issues are to determine the risk or significance level of the issue, conduct a critique to determine exactly what happened, establish the timeline of activities that led to the issue, conduct a causal analysis to determine the cause of the issue (as well as related causal factors), develop and complete a corrective action plan, and determine that the actions taken were effective in addressing the issue and achieving sustainable performance improvement.

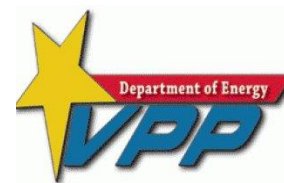
Findings, conclusions, and recommendations identified as a result of assessments and reviews are documented. Issues and necessary corrective and preventive actions are identified and tracked to closure

in PNNL's Issue Tracking System. Management verifies that these actions have been implemented, and there is systematic follow-up to verify effectiveness.

Most notably, the Laboratory's robust integrated performance management process includes a regular analysis of key elements, focusing on the effectiveness and efficiency of the process and M&O program performance, focusing on the extent to which the programs' requirements are adequately deployed across the Laboratory. Some performance measures from the integrated performance management process are incorporated into the Operational Excellence Culture indexes.

#### **2.3.4 VPP Triennial Reviews**

PNNL achieved the DOE-VPP Star status in 2001. Adoption of this voluntary program encourages a stretch for excellence through systematic approaches that emphasize creative solutions through cooperative efforts by managers, employees and DOE. The DOE-VPP Star status is aimed at truly outstanding protectors of employee safety and health. Recognition in DOE-VPP requires a triennial on-site review by the Office of Environment, Health, Safety and Security DOE-VPP Team to determine whether the applicant is performing at a level deserving DOE-VPP Star recognition. DOE-VPP tenets align with PNNL's safety culture objectives—in particular, management commitment and employee involvement.



### **3.0 Approach and Schedule for Implementation of the Tools/Activities**

Overall, PNNL has mechanisms in place to foster sustained improvement for Operational Excellence which includes safety culture. The annual Operational Excellence Evaluation provides an integrated approach to monitoring implementation of the four themes: leadership, risk management, engagement, and continuous improvement. Safety culture attributes based on DOE G 450.4-1C Integrated Safety Management System Guide Attachment 10, *Safety Culture Focus Areas and Associated Attributes* are embedded into the four themes. Each year the evaluation identifies strengths and weaknesses as well as associated actions to improve performance. Table 3.1 provides a summary of the primary opportunities for improvement identified in the 2014 annual evaluation (issued February 2014) and self-assessment process improvement actions planned for 2015.

**Table 3.1. Actions to Improve Safety Culture**

<b>Theme</b>	<b>Primary Opportunities for Improvement</b>	<b>Action / Completion Date</b>
Leadership	Project managers (PMs) may discourage reporting of concerns when they impact project cost or schedule. There is indication that the role of the technical group manager (TGM) and PM can conflict when project schedule or costs are tight. Project manager reaction to concerns may dissuade researchers and TGMs from raising concerns. <i>More information is needed to determine a trend.</i>	This issue was discussed with senior Laboratory management. PNNL will continue to monitor and collect additional data to analyze for trends during the FY2015 Operational Culture Evaluation (2/2015)
	The majority of staff members feel their concerns are respected and addressed; however, perceived overreaction discourages some staff members from raising concerns. Some staff are hesitant to report minor concerns because of the inordinate amount of time spent responding. <i>More information is needed to determine a trend.</i>	This issue was discussed with senior Laboratory management. PNNL will continue to monitor and collect additional data to analyze for trends during the FY2015 Operational Culture Evaluation (2/2015)
	Management acknowledges that Laboratory funding issues increases potential risk. Budget challenges have required the Laboratory to be extremely lean and efficient in the way that we deliver services and manage projects. Many times these efficiencies are asking staff to do more with less and can increase the potential for error.	Management will continue to monitor influences that may impose changes that could result in safety concerns as part of the performance assurance process. Ongoing
Engagement	Bureaucracy increases project costs and may encourage staff workarounds.	Continue to partner with research staff to improve efficiency and effectiveness of Laboratory processes. Ongoing
Other related to culture assessment	Review data streams and analyze data to evaluate performance across leadership, risk management, employee engagement, and continuous improvement.	Conduct Annual Operational Excellence Evaluation (2/2015)
	Develop a crosswalk of the Operational Excellence Credo and the safety culture attributes identified in DOE G 450.4 Attachment 10. Update Credo as needed based on gaps identified in crosswalk.	Evaluate Operational Excellence Credo for inclusion of Safety Culture Attributes (2/2015)
	Support continued maturity of safety culture evaluation process by participating in related EFCOG activities (e.g., self-assessment guidance development, training, sharing lessons learned).	Participate in EFCOG activities related to safety culture (2/2015)



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