Independent Oversight Assessment of Nuclear Safety Culture at the Idaho Cleanup Project Sodium Bearing Waste Treatment Project

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Office of Safety and Emergency Management Evaluations
Office of Enforcement and Oversight
Office of Health, Safety and Security
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Idaho Cleanup Project Sodium Bearing Waste Treatment Project**

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Acronyms

BARS	Behavioral Anchored Rating Scales
COBRA	Changing our Behavior Reduces Accidents
CWI	CH2M-WG Idaho
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
DOE-ID	Idaho Operations Office
ECP	Employee Concerns Program
EEO	Equal Employment Opportunity
HSS	Office of Health, Safety and Security
IWTU	Integrated Waste Treatment Unit
NRC	Nuclear Regulatory Commission
ORR	Operational Readiness Review
SBWTP	Sodium Bearing Waste Treatment Project
VPP	Voluntary Protection Program

1. Introduction

The U.S. Department of Energy (DOE) Office of Enforcement and Oversight (Independent Oversight), within the Office of Health, Safety and Security (HSS), conducted an independent assessment of nuclear safety culture[1] at the DOE Sodium Bearing Waste Treatment Project (SBWTP). The primary objective of the evaluation was to provide information regarding the status of the safety culture at SBWTP. The data collection phase of the assessment occurred in April and May 2012.

SBWTP is one of DOE's largest nuclear design and construction projects and a key part of the Idaho Cleanup Project (ICP). SBWTP, also known as the Integrated Waste Treatment Unit (IWTU), is a first-of-a-kind facility that will treat the remaining 900,000 gallons of liquid radioactive waste generated from the Idaho Site's legacy cleanup mission. DOE completed its Operational Readiness Review of IWTU in March 2012. IWTU entered a commissioning and initial equipment testing phase at the end of April 2012.

Within DOE, the DOE Headquarters Office of Environmental Management (EM) has line management responsibility for SBWTP. At the site level, line management responsibility for SBWTP falls under the Idaho Operations Office (DOE-ID). Under contract to DOE, CH2M-WG Idaho (CWI) is responsible for managing the SBWTP.

In addition to providing information to line management, this assessment satisfies a Secretarial commitment to the Defense Nuclear Facilities Safety Board (DNFSB) related to DNFSB Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant*. Specifically, in the Department's Implementation Plan dated December 27, 2011, the Secretary of Energy directed HSS to perform safety culture assessments of five major ongoing large nuclear design/construction projects to determine the extent of condition of safety culture concerns identified at the Hanford Site Waste Treatment and Immobilization Plant. The assessment of the SBWTP is the third safety culture evaluation of design/construction projects conducted as part of the extent of condition review.

Before starting the assessment, HSS enhanced its capability to assess safety culture through consultation with the U.S. Nuclear Regulatory Commission (NRC), several nuclear power generating utilities, and associated support organizations to benchmark their processes. Recognizing that it has significant expertise in nuclear safety and issues management but limited on-staff expertise in systematic application of behavioral science-based methodologies for performing safety culture assessments, HSS contracted with an external company that specializes in human performance analysis to support the data collection and analysis efforts.

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[1] While there are various safety culture models, the definition used in the Energy Facility Contractors Group report, which was accepted by the Deputy Secretary and referenced in the DOE Integrated Safety Management Guide 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 workers, the public, and the environment.

2. Scope and Methodology

This Independent Oversight assessment covered the DOE and contractor organizations that have responsibilities for SBWTP activities. These include the:
- DOE Idaho Operations Office. The review of the DOE-ID included organizational elements and individuals involved with the SBWTP.
- CH2M-WG Idaho. The review of CWI included the CWI partners and its subcontractors engaged with the SBWTP. CWI is a partnership among CH2M HILL, the Washington Division of URS Corporation (formerly Washington Group International), and Premier Technology (a small business partner).

An experienced HSS manager led the assessment. Onsite data collection was conducted primarily by HSS personnel. To ensure a valid and effective assessment of the existing safety culture, HSS used external independent safety culture experts to analyze various sources of data and perform an independent evaluation. The independent safety culture experts have extensive experience in the development and application of safety culture assessment methodologies used by commercial nuclear and other industries. Appendix A provides additional information about the composition of the Independent Oversight team, including the credentials of the independent safety culture experts.

With the guidance of the external independent safety culture experts, the Independent Oversight team selected a methodology for the 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 group and individual interviews, observations, and behavioral anchored rating scales.

The Independent Oversight team also arranged for the external independent safety culture experts to conduct a culture survey for project personnel using validated survey tools and techniques. The culture survey was conducted and analyzed by the external independent safety culture experts. The population sampled in the survey included Federal and contractor project employees.

The evaluation was conducted using the same methodology that aligns with the current NRC procedures for independent safety culture assessment, which identifies nine traits that are viewed to be necessary in the promotion of a positive safety culture:
- Leadership Safety Values and Actions
- Problem Identification and Resolution
- Personal Accountability
- Work Processes
- Continuous Learning
- Environment for Raising Concerns
- Effective Safety Communication
- Respectful Work Environment
- Questioning Attitude.

HSS tasked the independent safety culture experts to analyze the data collected during the assessment in accordance with their established methodology. Appendix B provides additional information about the methods and framework for the safety culture assessment.

3. Results and Conclusions

The safety culture evaluation performed by the external independent safety culture experts is provided in Appendix B, which provides positive observations and identifies areas in need of attention for each of the nine traits of a healthy safety culture. The independent safety culture experts evaluated the collective results to formulate conclusions about the status of the safety culture to facilitate the identification of improvement strategies.

The remainder of this section presents the conclusions of the independent safety culture experts for DOE-ID, CWI, and for the project as a whole.

Idaho Operations Office

The low overall response rate on the electronic survey, the expressed attitude by some that they "had higher priority things to do," and the perceptions of some of those that did provide information, indicate a disengagement from the importance of safety culture for the SBWTP. The importance of schedule and pressure to start the facility was prevalent throughout the time of the assessment and while some individuals expressed the "correct" values, the many perceptions provided to the team related to schedule pressure and identified in this report could evolve into more severe safety culture problems during the operation of the facility.

Information collected during this assessment indicates weaknesses of oversight of SBWTP by the DOE-ID personnel during the construction phase of the project. Several interviewees indicated that they perceive that CWI is willing to accept increased risk because some safety improvements cost too much or would take too much time. Several interviewees also perceive that DOE was willing to accept the risk by allowing CWI to do these things. Based on the existing DOE-ID management and personnel perceptions provided to the team, as well as identified contractor perceptions of DOE-ID, DOE needs to ensure the safe startup and operation of the facility by providing stronger oversight to the project.

CWI

The success of elements of the project has been driven by subcultures within the CWI Organization. Operations personnel hired into the SBWTP early on have taken their responsibilities professionally and have maintained many of the behaviors important for promoting a healthy safety culture. The short duration of the SBWTP may make the retention of these individuals throughout the life of the project tenuous.

Several initiatives by CWI are positive artifacts and claimed values around safety. However, the implementation of significant behaviors and decisions has demonstrated the value of production over safety and has been evident throughout various stages of the project through the commissioning/startup phase. Pressure to get the facility built and operating by emphasizing time over quality, relaxing oversight because of contractual relationships; poor quality of instructors, simulators not fully functional, and heavy reliance on self-study for operators and shift supervisors; delaying the hiring and training of radiological personnel; not ensuring sustainability of standards through continued training for staff in general; and not fully embracing As Low as Reasonably Achievable (ALARA) radiological practices are some examples cited by employees. These inconsistencies between the initiatives and the actions will not facilitate a healthy safety culture and while the life cycle of the facility and process may be short, the potential for low probability high consequence event must always be considered.

The data collected during this assessment indicates problems consistent with a project that has a short duration and a lot of uncertainty. Strong values around safety have not been internalized, the time span of the 'organization' is too short to develop a sense of ownership, and the culture is not cohesive but rather a collection of individual goals and values that drives behavior. This situation is also evident from the significant differences in perception between those in Senior Management and the rest of the organization.

SBWTP

The preponderance of the perceptions provided during this review from all involved parties indicate that the short life cycle of this project and the impending deadline of the agreement with the State of Idaho has created a 'just get it done' attitude on the part of all the parties involved. This has resulted in the perception of construction issues, procedural non-compliances and, in some cases, lax oversight.

There is a significant disconnect between the perceptions of the project's values and attitudes by the Senior Management of the Project and the rest of the Management Team and Staff. While not uncommon to see differences between management and staff in these types of perceptions, in the SBWTP the differences also exist between the different levels of management.

4. Recommendations

A healthy safety culture is most often found within an aligned organization that has effective processes, and motivated people. The following recommendations are initial steps that the Independent Safety Culture Evaluation Team believes are necessary to effectively implement and execute actions that will result in improved safe and reliable performance at SBWTP.

1. Senior Management of DOE-ID and CWI need to fully embrace the value of promoting the behaviors important for a healthy safety culture. This will require more of an oversight role for DOE in ensuring that all standards are implemented as intended regardless of the duration of the project through facility operation. Accountability to implementing those standards must be ensured by DOE as well as CWI.

2. The retention of the Operations Personnel who have been critical to the success of elements of the Project need to be ensured throughout the life of the Project and operation of the facility. Efforts to ensure their engagement for the duration of time that they are needed must continue to be implemented and perhaps enhanced.

EM, DOE-ID, and the contractor should evaluate the results of this Independent Oversight safety culture report in their entirety, including the culture insights provided in Appendix B and the above conclusions and recommendations. The insights are intended to stimulate the organizations to reflect on their culture in order to understand the values and assumptions that may be driving behaviors and thus help to shape interventions supportive of a healthy safety culture. Developing a massive amount of corrective actions may perpetuate a compliance mentality, which is not conducive to creating and promoting a healthy safety culture thus efforts to assure that there is a traditional corrective action associated with each insight may be counterproductive. To the extent that corrective actions are identified for specific recommendations, it is recommended that they be managed in accordance with established causal analysis and issues management processes and initiate appropriate, processes as appropriate.

Appendix A
Supplemental Information

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Dates of Review

Scoping Visit	April 11-12, 2012
Onsite Data Collection:	May 21-24, 2012
Survey Open Period	April 23 to May 10, 2012
Closeout:	June 12, 2012

Office of Health, Safety and Security Management

Glenn S. Podonsky, Chief Health, Safety and Security Officer
William A. Eckroade, Principal Deputy Chief for Mission Support Operations
John S. Boulden III, Director, Office of Enforcement and Oversight
Thomas R. Staker, Deputy Director for Oversight
William E. Miller, Deputy Director, Office of Safety and Emergency Management Evaluations

Quality Review Board

William Eckroade
John Boulden
Thomas Staker
Michael Kilpatrick
Robert Nelson

Assessment Team Members

Thomas Staker, Team Leader
Pat Williams, Deputy Team Leader
Joe Lischinsky
James Lockridge
Ed Stafford
Mario Vigliani

Support

Mary Ann Sirk

Independent Safety Culture Experts

Dr. Sonja Haber, Independent Safety Culture Expert
Dr. Deborah A. Shurberg, Independent Safety Culture Expert

Expertise and Credentials of the Independent Safety Culture Experts

Human Performance Analysis Corporation (HPA) is one of the leading consulting groups working to assist organizations in **performance improvement** through the understanding and leveraging of the individual, process, and organizational behaviors necessary to facilitate safe operating performance.

The HPA team is composed of experts in **organization and management, safety culture,** and **human performance analysis**. HPA has decades of experience working across numerous different industries where high safety performance is required, both in the United States and abroad.

HPA provides performance improvement services to public and private sector clients conducting safety-sensitive operations across a wide range of industries including nuclear, healthcare, mining, research, engineering, transportation, and energy.

The principals are:

Sonja B. Haber, Ph.D. Dr. Haber has been conducting work in the area of human performance analysis for over 30 years. S he has been involved in the evaluation and intervention of human performance strategies in various applications, including nuclear facilities. For the last 23 years, Dr. Haber's work has focused on improving human performance within organizations that must operate with a high degree of reliability. She has been extensively involved in conducting fieldwork for various international agencies in efforts related to enhancing human performance. Her work has also included cross-cultural analysis of organizational issues in the areas of safety culture and management and supervisory skills. Most recently, Dr. Haber has been conducting safety culture evaluations in various organizations; providing consultation in organizational interventions including leadership and management training, enhanced communication, and observational skills training; and working toward the development of performance measures for organization and management processes.

Deborah A. Shurberg, Ph.D. Dr. Shurberg's primary interests lie in the development and implementation of methodological tools useful for the analysis and improvement of organizational functioning and in the assessment and evaluation of human resource practices critical to effective organizational performance. In particular, her work focuses on improving human performance within organizations that must function with a high degree of reliability and the assessment and improvement of organizational behaviors that impact safety culture. Dr. Shurberg has extensive experience across a variety of industries and countries, providing support in the diagnosis of organizational and management strengths and areas in need of improvement. She has significant experience in the development and implementation of intervention strategies within the nuclear industry, particularly on human-performance related topics including communication skills, observational skills, and management and supervisory skills.

More information can be found at: http://hpacorp.com/

Appendix B

An Independent Evaluation of Safety Culture at the Idaho Cleanup Project Sodium Bearing Waste Treatment Project

Independent Safety Culture Evaluation Team:

Dr. Sonja B. Haber, Consultant, HPA
Dr. Deborah A. Shurberg, Consultant, HPA

Appendix B
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B.1   Introduction

This Appendix describes the results of an independent evaluation of the existing Safety Culture at the Department of Energy (DOE) Sodium Bearing Waste Treatment Project (SBWTP). The population of the evaluation was all employees (contractor, and subcontractor) assigned to the SBWTP at the Idaho Cleanup Project. These employees included personnel from the DOE Idaho Operations Office (both the DOE-EM and DOE-NE Offices) and the CH2M-WG Idaho (CWI) Contractor Organization. The evaluation was conducted during April and May 2012. The primary objective of the evaluation was to provide information regarding the status of the safety culture traits at the SBWTP. The evaluation was conducted using the same methodology that aligns with the current U.S. Nuclear Regulatory Commission (NRC) procedures for independent safety culture assessment.

In addition, the framework applied to the collection and analysis of data is that recently described by the NRC. Positive observations and areas in need of attention with respect to the traits necessary for a healthy safety culture are presented. The detailed results presented in this Appendix support the summary results and recommendations provided in the main report.

B.2   Background

Evaluating the safety culture of a particular organization poses some challenges. Cultural assumptions, which influence behavior and, therefore, safety performance, are not always clearly observable. Schein (1992) presents a model of culture that helps in understanding how the concept can be assessed. In Schein's model, culture is assumed to be a pattern of shared basic assumptions, which are invented, discovered or developed by an organization as it learns to cope with problems of survival and cohesiveness.

According to Schein's three-level model, an organization's safety culture can be assessed by evaluating the organization's artifacts, claimed values, and basic assumptions. On the first level of the model are the organization's artifacts. Artifacts are the visible signs and behaviors of the organization, such as its written mission, vision, and policy statements. The second level consists of the organization's claimed or espoused values. Examples of claimed values might include mottos such as, "safety first" or "maintaining an open reporting work environment." The third level is comprised of the basic assumptions of the individuals within the organization. Basic assumptions are the beliefs and attitudes that individuals bring into the organization or that are developed because of experience within the organization. Examples of basic assumptions may include, "safety can always be improved" or "everyone can contribute to safety." The organization's basic assumptions regarding safety culture are less tangible than the artifacts and claimed values. They are often taken for granted within the organization that shares the culture.

Artifacts, claimed values, and basic assumptions are evaluated to identify the presence or absence of the of the safety culture traits that have been found to be important for the existence of a healthy safety culture within a nuclear facility (INSAG-15, 2002; INPO Principles for a Strong Nuclear Safety Culture, 2004; NRC Inspection Manual 0305, 2006). The NRC and its stakeholders have recently agreed upon nine traits which are viewed to be necessary in the promotion of a positive safety culture. These include:

- Leadership Safety Values and Actions
- Problem Identification and Resolution
- Personal Accountability
- Work Processes

- Continuous Learning
- Environment for Raising Concerns
- Effective Safety Communication
- Respectful Work Environment
- Questioning Attitude.

Particular behaviors and attitudes have been identified to evaluate the extent to which the organization has attained these attributes. A variety of different methods are employed to collect information about the various behaviors and attitudes identified.

Most of the methodology used in this evaluation was originally developed with the support of the U.S. Nuclear Regulatory Commission (1991) to assess the influence of organization and management on safety performance. The methodology entails collecting a variety of information that is largely based upon the perceptions of the individuals in an organization, as well as conducting structured observations of individuals performing work activities. Perceptions are often reality when it comes to influencing behavior and understanding basic assumptions. Therefore, the data collected regarding individuals' perceptions are critical to this type of evaluation.

B.3   Scope of Safety Culture Evaluation

The scope of this evaluation was defined to include all employees, federal, contractor, and subcontractors assigned to the SBWTP in Idaho. This scope included personnel from the DOE Idaho Operations Office (both the DOE-EM and DOE-NE Offices) and personnel from the CH2M-WG Idaho (CWI) Contractor Organization. The Safety Culture Data Collection Team was on site at the SBWTP in Idaho during April and May 2012. In addition, the Organizational Safety Culture Survey was electronically administered during that same time period with the survey being open for completion by employees from April 23 to May 10, 2012.

The Safety Culture Data Collection Team was used by the Independent Safety Culture Evaluation Team to assist in collecting onsite data and was comprised of the HSS Independent Oversight Team. The HSS staff had been trained on applying data collection techniques and conducting focus group interviews.

This safety culture evaluation is a 'point in time' snapshot of the SBWTP. During the timeframe the review was conducted, the project was completed with the completion of the DOE Operational Readiness Review (ORR). The SBWTP facility, also known as the Integrated Waste Treatment Unit (IWTU) started commissioning and initial equipment testing at the end of April. Therefore SBWTP and IWTU are used interchangeably.

Although the team recognizes that the SBWTP may be making organizational and process changes to continue improving safety culture since the point in time at which the evaluation was conducted, the team has not evaluated the impact of those actions. Therefore, changes that have occurred subsequent to the time of the evaluation are not discussed in this report.

B.4   Methodology

The complete details of most of the methodology used in this evaluation are presented elsewhere (Haber and Barriere, 1998), but are briefly described in this section. Five methods are used to collect information on the organizational behaviors associated with the safety culture traits. These methods are:

- Functional Analysis
- Structured Interviews and Focus Groups
- Behavioral Anchored Rating Scales (BARS)
- Behavioral Observations
- Organizational and Safety Culture Survey.

The use of multiple methods to assess any organizational behavior assures adequate depth and richness in the results obtained. In addition, confirming the results obtained through the use of one method with results obtained through the use of another method provides convergent validity for the results. A brief description of each method is provided below.

B.4.1   Functional Analysis

The purposes of the Functional Analysis are to: (1) clearly identify the organizational units of the Project, (2) gain an understanding of each organizational unit's functions and interfaces, (3) examine the way in which information flows within and between units, and (4) identify the key supervisory and managerial positions of each organizational unit. Information to support this activity was obtained primarily through the review of the documentation identified below, some semi-structured interviews, and some observations of organizational activities. The organizational behaviors to be evaluated were identified from the information collected during this analysis.

In addition, a scoping visit was conducted April 11-12, 2011 so that documentation could be reviewed at the facility and select interviews could be conducted so that plans for the onsite evaluation could be developed. During the scoping visit, interviews or focus groups were conducted with approximately 20 individuals associated with the SBWTP.

Documentation Review

During the Data Collection Team's activities, a wide variety of documents were reviewed including SBWTP program and project plans, SBWTP technical and administrative procedures, project organization charts, interoffice memoranda, applicable DOE regulations and technical standards, corrective action reports, and root cause analyses.

Organizational Behaviors

Based upon the information obtained from the Functional Analysis, the following organizational behaviors were identified for evaluation:

Attention to Safety – Attention to Safety refers to the characteristics of the work environment, such as the norms, rules, and common understandings that influence site personnel's perceptions of the importance that the organization places on safety. It includes the degree to which a critical, questioning attitude exists that is directed toward site improvement.

Communication – Communication refers to the exchange of information, both formally and informally, primarily between different departments or units. It includes both the top-down (management to staff) and bottom-up (staff to management) communication networks.

Coordination of Work – Coordination of Work refers to the planning, integration, and implementation of the work activities of individuals and groups.

Formalization - Formalization refers to the extent to which there are well-identified rules, procedures, and/or standardized methods for routine activities as well as unusual occurrences.

Organizational Learning – Organizational Learning refers to the degree to which individual personnel and the organization, as whole, use knowledge gained from past experiences to improve future performance.

Performance Quality – Performance Quality refers to the degree to which site personnel take personal responsibility for their actions and the consequences of the actions. It also includes commitment to and pride in the organization.

Problem Identification and Resolution – Problem Identification and resolution refers to the extent to which the organization encourages facility personnel to draw upon knowledge, experience, and current information to identify and resolve problems.

Resource Allocation – Resource Allocation refers to the manner in which the facility distributes its resources including personnel, equipment, time and budget.

Roles & Responsibilities – Roles and Responsibilities refer to the degree to which facility personnel's positions and departmental work activities are clearly defined and carried out.

Time Urgency - Time Urgency refers to the degree to which facility personnel perceive schedule pressures while completing various tasks.

These behaviors are then used to provide information on the nine traits according to the following framework:

- Leadership Safety Values and Actions – Attention to Safety; Resource Allocation; Time Urgency
- Problem Identification and Resolution – Problem Identification and Resolution
- Personal Accountability – Performance Quality; Roles and Responsibilities
- Work Processes – Coordination of Work; Formalization
- Continuous Learning – Organizational Learning
- Environment for Raising Concerns – Safety Conscious Work Environment Questions from electronic survey
- Effective Safety Communication - Communication
- Respectful Work Environment – Communication Trust Scale from electronic survey
- Questioning Attitude – Attention to Safety.

B.4.2 Structured Interview and Focus Group Protocol and Behavioral Anchored Rating Scales (BARS)

The Structured Interview and Focus Group Protocol was derived from a database of interview questions. A particular subset of questions can be selected to provide a predefined focus to an interview or focus group session. The Independent Safety Culture Evaluation Team selected a set of questions to gather information related to the safety culture traits from the organizational behaviors identified from the Functional Analysis.

A total of 22 individual interviews and 7 focus groups were conducted as part of the assessment. A total of 63 individuals were involved in one these activities. Each interview lasted one hour and each focus group lasted approximately one and a half hours. A few less formal follow-up interviews were conducted to provide further clarification when necessary.

The Behavioral Anchored Rating Scales (BARS) were administered to most individuals who participated in the structured interviews and/or focus groups. Each interviewee was administered the BARS associated with four different organizational behaviors. The BARS provided the opportunity to quantitatively summarize qualitative data associated with the interviewee's perceptions of the organization. Approximately 239 BARS were collected representing 10 organizational behaviors. Of those 239 BARS, 171 were from CWI personnel, and 68 were from DOE personnel.

B.4.3 Behavioral Observations

The use of behavioral observations provides an unobtrusive assessment of particular organizational behaviors and critical processes including work planning, management meetings, department meetings, and responses to planned or unplanned events. The selected organizational behaviors are specifically identified in the evaluation of the activities observed.

During the course of the Safety Culture Evaluation, approximately 13 observations were conducted. The data represent observations of IWTU Corrective Action Review Boards, IWTU Multiple Room Low Oxygen Monitor Alarm Drill, IWTU Plan of the Day Meeting, IWTU Rad Con Technician Shift Turnover, Control Operations and Shift Turnovers, Off gas Blower Post Maintenance Testing, Operations activities during off gas blower startup, Federal Operations Activities Team Meeting, Maintenance Crew Briefing, IWTU Blower Seal Removal Pre-Job Briefing and Seal Removal, and a facility tour.

B.4.4 Organizational and Safety Culture Survey

The primary purpose of administering a survey is to measure, in a quantitative and objective way, topics related to the behaviors of interest. By conducting a survey, a broad sample of the individuals in the organization can be obtained and it is possible to gather information from a larger number of personnel than can be reached through the interview process alone. Portions of the survey used in this evaluation have been administered previously by the Independent Safety Culture Evaluation Team Lead at over 50 different organizations.

A total population of approximately 223 personnel was invited to participate in the survey of which 151 actually completed the survey, representing a response rate of 67.7%. While this response rate is considered to be an acceptable rate of response from which representative conclusions regarding perceptions and attitudes concerning the work environment can be made, it is lower than desirable. Of note is the fact that only 23 individuals identified themselves as belonging to a DOE organization which represents a 45% response rate for that organization's population.

B.5 Results

The results presented below summarize the insights gained from the evaluation team's analyses of the structured interviews and focus groups, BARS, observations, and survey data. Survey data was obtained for the SBWTP Contractor, Subcontractors, and Federal Employees who are dedicated to the Project on a full-time basis, as well as those individuals from all organizations that support the Project on a part time basis. The results are presented in terms of the Safety Culture traits for both the Contractor and Federal organizations. Positive Observations and Areas in Need of Attention related to each trait are presented

and provide the observations, insights and data to understand their impact on the overall health of Safety Culture. In addressing improvements, the Areas in Need of Attention should be considered and used as examples for an action that would address a behavior that would help several if not all of these points. It is not the intention that each Area in Need of Attention result in a corrective action as would occur with an Area for Improvement. Developing a massive amount of corrective actions only perpetuates a compliance mentality, which is not conducive to creating and promoting a 'healthy safety culture'.

It must be noted that the response rate for the survey among Federal Idaho Operations Office employees associated with the SBWTP was only 45%. This low response rate does not allow extrapolation to the entire population of Federal employees that were invited to participate in the survey. Consequently, any data obtained solely from the survey of the Federal respondents cannot be included as representative of the organizational opinions and beliefs of the DOE employees associated with this project, although information from the survey that corroborates data obtained from the functional analysis, structured interviews and focus groups, BARS, and behavioral observations may be referenced and used to support overall conclusions. The response rate for the CWI employees was 70.3 % which is considered minimally acceptable; therefore that data will be included but must also be carefully evaluated in light of the other sources of data collection.

B.5.1   Leadership Safety Values and Actions

Leaders demonstrate a commitment to safety in their decisions and behaviors.

Positive Observations

Idaho Operations Office/IWTU

- Many interviewees perceive that nuclear safety is not traded off over schedule on either the federal or contractor side.
- Several individuals indicated that they have never been turned down when requesting additional resources, e.g., hired more contractors for Quality Assurance when needed.
- Interviewees indicated that they perceive that the SBWTP takes top priority even within the Nuclear Energy side of the Site Office and that they do not perceive any conflict with support for the project.
- Some interviewees indicated that oversight plans can be updated and that there is some flexibility in meeting the plan.
- Interviewees do not perceive that anyone is pressured or coerced to do something that isn't right.
- Results from the Behavioral Anchored Rating Scale on Time Urgency indicate that approximately 88% of DOE individuals that completed this scale perceive that most tasks are completed on time without compromising safety or quality. All of the DOE Managers that completed this scale perceived this to be true.

CWI/IWTU

- Interviewees and observations by the Team indicated that safety issues are addressed regularly and that efforts are made at every meeting and activity to begin with a safety share.
- Several interviewees indicated that individuals are not afraid to use the step back/stop work process, e.g., craft identified a potential gas release issue in a work order and called for a step back; at least 6 different step backs were used during construction.
- Efforts in Voluntary Protection Program (VPP), COBRA (Changing our Behavior Reduces Accidents), reward programs, and management training were identified by interviewees as steps to improve safety performance.

- Some interviewees indicated that some procedures were changed to address safety concerns identified by operators, e.g., installation of scaffolding instead of ladders, un-insulated piping was barricaded.
- Some interviewees indicated that additional resources were provided when needed, e.g., Environment, Safety and Health positions, contractor support in Employee Concerns Program.
- Most management level interviewees indicated that they did not perceive a tradeoff between schedule and safety. While most acknowledged schedule pressure they did not perceive it to be at the expense of safety.
- Some interviewees indicated that there are bonuses for safety at the end of the year.
- The Team observed post maintenance testing on the Off gas Blower and saw clear examples of conservative decision making by the Maintenance Foreman. The Foreman ensured that all parties were engaged in asking questions and providing input towards the decisions that needed to be made.
- Results from the Behavioral Anchored Rating Scale on Time Urgency indicate that approximately 78% of CWI individuals that completed this scale perceive that most tasks are completed on time without compromising safety or quality. Managers perceived this to a greater extent than Non-Managers did.

Areas in Need of Attention

Idaho Operations Office/IWTU

- The Team believes that the low response rate on the part of the DOE Employees is an indication that the message to participate in the survey was not communicated well or perceived to be important enough for individuals to act upon. This reflects an attitude that has not been seen in other DOE sites evaluated to date. In addition, the data that was collected (45%) was fairly neutral, indicating less than highly prioritized perceptions and beliefs around many of the behaviors demonstrated to be important for a healthy organizational safety culture.
- Several interviewees indicated that they perceive that CWI is willing to accept increased risk because some safety improvements cost too much or would take too much time. Examples cited by the interviewees include:
    - Accelerated Retrieval Project (ARP) tents did not meet fire protection codes;
    - INTEC Communication System did not work;
    - Accepting radiological risk because of the short life time of the IWTU facility, e.g., the facility was not built using common ALARA practices. Contractor ORR did not identify all issues as perceived by DOE. However, the contractor's review (ESH and Rad Con) process was used to identify and document compensatory measures as to why risks were acceptable. DOE oversaw the process and ultimately resolved the issue by accepting that this documentation met the requirements of 10 CFR 835, subpart K.
    - Less than conservative decisions to get things done quickly, e.g., silicon controlled rectifiers, coal system.
    - Safety cannot really be the priority when there are issues like weld defects in the piping, seals and filters not functioning properly.
- Several interviewees also perceive that DOE was willing to accept the risk by allowing CWI to do these things.
- Some interviewees indicated that they have to do a lot of work to convince people within DOE that things are not as safe as they should be. They perceive that the basic assumption is that things are safe until proven otherwise. Interviewees indicated that this was not necessarily specific to IWTU but that schedule pressure was often cited as a reason for this philosophy.
- Some interviewees perceive limited time to complete some tasks and the work load then induces pressure which potentially impacts safety. For example, some interviewees stated that if the

schedule for reviewing safety basis documents is missed, documents are automatically approved increasing the pressure to turn more documents around. This was agreement negotiated with the contractor.

- Results on the Behavioral Anchored Rating Scale for Attention to Safety indicate that approximately 50% of the DOE Non-Managers that completed this scale provided a mid-range score which indicates that they perceive that project management reflects a delicate balance of emphasizing safety, while at the same time making it clear that there is a need to keep the project on schedule.
- Results from the Behavioral Anchored Rating Scale on Resource Allocation indicate that approximately 80% of the DOE Non-Manager interviewees that completed this scale are either uncertain or do not perceive that employees have sufficient resources to implement corporate goals nor do they perceive that the employees understand how these goals relate to their daily activities.

CWI/IWTU

- Many interviewees provided examples of where decision making was not perceived to reflect the highest commitment to safety.
    - o CWI did not hold URS to the same standard that it would for other subcontractors because of their partnership.
    - o URS put oversight people on the project and then did not back fill the oversight positions.
    - o Piping in the building is not well labeled.
- Interviewees indicated that the facility was not built using common ALARA practices:
    - o Unfinished floors
    - o Facility is not partitioned to stop the spread of airborne contaminants
    - o No decontamination sinks or showers
    - o The Rad Con office is in a storage room
- Compensatory measures for the radiological issues are described by interviewees as not yet complete because of budget issues, e.g., opening the fence to INTEC for decontamination.
- Radiation Control Technicians were brought in late to the project, perceived by some interviewees to be because of budget concerns. Many interviewees have expressed concerns about their capabilities once the facility becomes radioactive.
- Operations personnel were brought in early. However, interviewees indicated that the poor quality of instructors, poor performance of simulators, heavy reliance on self-study, and lack of refresher training, is indicative of either budget issues or how the value of training is perceived by management.
- Interviewees describe that training is starting to slip because of budget issues. Lockout tag out (LOTO) training for planners has lapsed and consequently some jobs can't be walked down because they cannot sign in on a LOTO.
- Many interviewees described feeling a lot of time pressure with unrealistic schedules to meet and taking shortcuts and working outside of procedures to get things done quickly.
    - o Interviewees indicated that threats were made by Senior Management for people to work beyond the overtime rules.
    - o Some interviewees described managers pressuring them by indicating to them that if they didn't get things done on time that it would make the manager's job harder.
    - o Several interviewees indicated that the pressure was not for critical equipment or personnel protection but so that Senior Management could get their bonuses.
    - o Many interviewees indicated that they were afraid to challenge the work rules and would sometimes work 7 days a week.

- o Interviewees expressed the perception that many of the issues that the project had during construction were because schedule was the issue and construction workers were pushed to work fast and cheap.
- o The Team observed a significant amount of pressure being applied to the maintenance supervisors to replace the 260B Off-gas Blower seals since the failure of these seals was resulting in delays in start-up testing. A lot of pressure was coming from the IWTU Vice President's office to fix the seals and in fact inspection of the seals was to occur in his office.
- ■ Results on the Behavioral Anchored Rating Scale for Attention to Safety indicate that approximately 42% of CWI Non Managers and 22% of CWI Managers that completed this scale provided a mid-range score, which indicates that they perceive that project management reflects a delicate balance of emphasizing safety, while at the same time, making it clear that there is a need to keep the project on schedule.
- ■ Results on the Behavioral Anchored Rating Scale for Resource Allocation indicate that 60% of the CWI Non Managers and 32% of the CWI Manager interviewees who responded to this scale were either negative or uncertain in their perceptions of how resources are allocated across the project.
- ■ Results on the Attention to Safety Scale on the electronic survey were on the moderate side of scores compared to a database of other similar organizations' responses to the same questions. This indicates that survey respondents had moderate perception of the importance that safety has to success in their organization as measured by the value placed on various safety promoting behaviors.

B.5.2   Problem Identification and Resolution

Issues potentially impacting safety are promptly identified, fully evaluated, and promptly addressed and corrected commensurate with their significance.

Positive Observations

Idaho Operations Office/IWTU

- ■ Multiple mechanisms for identifying problems within the Site Office were described by interviewees including Operations Activities Team meetings, IPT meetings, DOE/Contractor meetings, facility representatives, Senior Management visible in the field, an open door policy with supervision and management.
- ■ Interviewees indicated that they were encouraged to write up their assessments and put them in Pegasus.
- ■ The Site Office is part of the VPP.
- ■ Interviewees described the interface and support from DOE Headquarters, especially the Office of Safety in EM, as impressive in bridging the gap between the field and HQ.
- ■ Data from the Behavioral Anchored Rating Scale on Problem Identification and Resolution indicated that 82% of the DOE Non-Manager Interviewee respondents who completed this scale provided a high rating indicating that they perceived that the organization encourages project personnel to draw upon knowledge, experience and current information to identify and resolve problems positively.

CWI/IWTU

- Most interviewees identified that multiple mechanisms exist within CWI to report problems and that people are generally willing to do so. Mechanisms described included management and supervision open door policy, safety shares, ICares, Employee Safety Teams (EST), pre-job briefs, COBRA meetings, verbal discussions, and ECP
- Interviewees indicated that negative observations entered into COBRA generally get a lot of follow up, e.g., access cover in the road, slippery concrete pad.
- Data from the Behavioral Anchored Rating Scale on Problem Identification and Resolution indicated that 100% of the CWI Manager and 92% of the CWI Non-Manager Interviewee respondents who completed this scale provided a high rating indicating that they perceived that the organization encourages project personnel to draw upon knowledge, experience and current information to identify and resolve problems positively.

Areas in Need of Attention

Idaho Operations Office/IWTU

- Several interviewees indicated that they believe that both DOE and the Contractor were not as diligent as they could have been during construction.
- Some interviewees expressed the belief that the DNFSB had the right to want more rigor from the Project, but they believe that they went overboard.
- Interviewees expressed the perception that there is weak oversight of the IPT on the Federal side and that there are different expectations for EM and for NE for project management. Additionally interviewees indicated that independent oversight is only from HQ – EM.
- Interviewees expressed concerns about the proficiency of the Rad Con technicians that had been brought in by CWI and hoped that they would improve over time.

CWI/IWTU

- Interviewees and observations by the Team did identify some problems with the problem identification and resolution processes at SBWTP that may inhibit a healthy safety culture.
  - o Every item is urgent and there are always a lot of things on the critical path which increases the pressure not to add to the work load, especially if they are perceived to be lower level priority issues.
  - o Interviewees indicated that it takes a long time to get things resolved.
  - o The Team observed a discussion at the IWTU Corrective Action Board (CARB) Meeting about some new ICARES items resulting from DOE entries into Pegasus, as well as ORR observation or Facility Representative walk down items. The double entry of some items needs to be resolved.

B.5.3   Personal Accountability

All individuals take personal responsibility for safety.

Positive Observations

Idaho Operations Office/IWTU

- The interface between DOE-EM and DOE-NE through the AM for Nuclear Safety and Performance is described by most interviewees as good. Areas such as Fire Protection, Quality Assurance, Radiation Protection and Facility Representatives are managed such that there are no gaps in the Safety and Health area.

- Interviewees indicated that their position descriptions and technical qualification profiles are fairly generic and high level and correct at the level at which they are written.
- Interviewees perceive that DOE held CWI accountable during construction of the facility when CWI had to put in their own money to complete construction.
- Some interviewees also indicated that through quality control, from both the DOE and Contractor side, no issues should remain in the quality of the building from the work performed by those individuals involved in the substance abuse issue.

CWI/IWTU

- Most interviewees indicated that their job descriptions were fairly generic and therefore accurate for that level.
- Several interviewees indicated that CWI has a better relationship with the unions than URS did. They hold all employee meetings and discuss their strategy for certain company actions, e.g., downsizing.
- Interviewees described that DOE was very good at sharing resources across the NE and EM Offices, e.g., NE has better approach to oversight of safety, while EM has an approach to project management which NE did not have until recently.
- Accountability for safety is part of performance management which includes safety criteria.
- The Team observed accountability in the CARB Meeting where the Chair continually queried member on the status of their ongoing closure activities.
- Data on the Behavioral Anchored Rating Scale for Roles and Responsibilities indicated that 100% of CWI Manager interviewees who completed this scale provided a high rating indicating a perception that employees understand their duties, know who to go to when a task needs to be done and understand their role in completing cooperative activities.
- Data on the Behavioral Anchored Rating Scale for Performance Quality indicated that 75% of CWI Manager interviewees who completed this scale provided a high rating suggesting that they perceive that employees understand their duties and have a sincere desire to do top quality work. Among CWI Non-Manager interviewees approximately 60% perceived performance quality positively.

Areas in Need of Attention

Idaho Operations Office/IWTU

- Several interviewees indicated that there are different expectations between the DOE-EM and DOE-NE Offices on the project. DOE-EM is more hands on because their driver is the DNFSB. This has created double standards for the Site Office and the Project.
- Interviewees indicated that the relationship between CWI and URS created several issues for DOE on the project.
    - o Towards the end of the construction phase of the project it was difficult for DOE to find a responsible party; CWI was the main contractor with URS as a subcontractor for construction. When URS safety disappeared, CWI safety was there but if DOE went to CWI they would often say that they were not responsible and that DOE should go to URS.
    - o CWI provided the QA Manager, URS provided the inspectors. DOE was finding issues and asked why CWI QA wasn't finding the issues first.
    - o No one would take ownership of doing good analyses, corrective actions, reporting in ORPS; CWI said it was URS' problem and URS was doing it with CWI employees; DOE eventually demanded that CWI take ownership for the ORPS entries.

- Interviewees indicated that there have been no employee concerns from IWTU, either on the Federal or Contractor side, which is unusual for a project of this size and duration. Concerns have been raised from other areas within ICP, but not from SBWTP.
- Data on the Behavioral Anchored Rating Scale for Performance Quality indicates that about 32% of the DOE Non Manager interviewees who completed this scale are either negative or uncertain in their perceptions that project personnel take personal responsibility for their actions and the consequences of the actions.

CWI/IWTU

- Accountability is perceived by several groups to be an issue during construction. Some examples include:
  o Lack of welding documentation; URS had good procedures but they were not followed because of a "production – get it done mentality"; reporting was on how many welds were completed every day, but welders did not complete paperwork to certify the welds.
  o Deficiency reports on work were written, but the IWTU Project Director did not perceive them to be a priority at the time; at one point there were 43 deficiency reports and at least one was a year overdue; accountability was not there until it was clear that resolving deficiency reports were essential for project completion (i.e. successful ORR).
  o During construction there were breakdowns in job execution and work control, e.g., a heavy shield door was tipped in an area where several people were working; no critical lift plan or work package was at the worksite, workers did not follow hold points while performing the task and no accountability was taken for how it happened. *(Note: refer to PAAA Notice of Violation issued on 10/3/11 to URS for event that occurred 10/4/2010 - telescopic hydraulic gantry system (THGS) tipped against building structure while lifting a 7,800 lb shield plug door at the SBWTP.)*
  o Often steps in the procedures cannot be followed as written because subject matter experts are not reviewing them.
  o Had to do a lot of rework during construction because of URS subcontract arrangement and the quality of the work could not be verified. Perception from a number of workers was that since URS was both the construction subcontractor and part of the IWTU project team that as a subcontractor they were less accountable than if another construction subcontractor had been hired who was not part of the IWTU project management team.
- Some interviewees perceive that the impact of several changes that have been made since passing the ORR may not be the best for the project, e.g., less experienced Rad Con Manager has been moved into the position; QA Manager is now moved into ICP rather than being dedicated to IWTU.
- Most CWI interviewees perceive DOE in an oversight role; some however see that DOE needs to support the project with DNFSB and EM-1.
- Data on the Behavioral Anchored Rating Scale for Roles and Responsibilities indicates that 40% of the CWI Non-Manager respondents to this scale have a negative perception of the extent to which facility personnel's positions and departmental work activities are clearly defined and carried out.
- Scores across SBWTP on the Commitment Scale from the electronic survey indicated that 70% of the Union, 62% of Non-supervisory, 40% of Management/Supervisor/Team Lead, and almost 30% of the Senior Management respondents were negative or uncertain in their commitment to the project. These differences were statistically significantly different and included both the DOE and CWI survey respondents.

B.5.4 Work Processes

The process of planning and controlling work activities is implemented so that safety is maintained.

Positive Observations

Idaho Operations Office/IWTU

- Interviewees described and the Team observed that DOE participates in the daily Plan of the Day Meeting where all ongoing and planned IWTU work activities are discussed.
- Interviewees described a lot of formalization – policy directives, office procedures, agreements which control work and outline roles and responsibilities.
- Interviewees indicated that all DOE Orders and Manuals are contained in the CWI Contract and clearly identify requirements for the project.
- Interviewees indicated that CWI and DOE work together to help resolve issues.
- Interviewees indicated that they were incredibly pleased with the support that the project receives from the Idaho Operations Office.
- Data on the Behavioral Anchored Rating Scale for Formalization indicates that 100% of DOE Manager and 68% of DOE Non-Manager Respondents to this scale have a positive perception of the extent to which there are well-identified rules, procedures, and/or standardized methods for routine activities as well as unusual occurrences.

CWI/IWTU

- Plan of the Day meetings were described by interviewees as a good way to plan out the day and work through issues.
- Interviewees described that through ISMS every piece of work is done with a piece of paper and that the project is integrated through that system.
- Interviewees indicated that all maintenance comes through INTEC and that non-shift individuals cover the day to day maintenance activities, while on shift covers the process.
- Interviewees pointed out that IWTU has its own dedicated planners.
- Some interviewees indicated that resources can be pulled from other projects in CWI if needed for IWTU.
- Data on the Behavioral Anchored Rating Scale for Coordination of Work indicates that 100% of the CWI Manager respondents to this scale have a positive perception of the planning, integration, and implementation of work activities of individuals and groups.
- Interviewees indicated that project work is performed with 3 types of procedures, in hand use, must be on the person, or reference.
- Interviewees indicated that if the procedure is unclear, work is stopped and the procedure is sent back to the planner. Initially this was common but the procedures have been improving.
- Most interviewees indicated that they perceive that verbatim compliance to standards and procedures is the underlying management expectation.
- Data on the Behavioral Anchored Rating Scale for Formalization indicates that 100% of CWI Manager and 82% CWI Non-Manager Respondents to this scale have a positive perception of the extent to which there are well-identified rules, procedures, and/or standardized methods for routine activities as well as unusual occurrences.

Areas in Need of Attention

Idaho Operations Office/IWTU

- Some interviewees perceived that the Documented Safety Analysis (DSA) for IWTU was inadequate and that DOE-EM did not know about it until after the ORR was complete. They stated that items were identified that needed to be fixed before startup.
- Interviewees indicated that most coordination of work is shifting often based upon the types of expertise that is needed and available.
- Data on the Behavioral Anchored Rating Scale for Coordination of Work indicates that only 50% of the DOE Non-Manager respondents to this scale have a positive perception of the planning, integration, and implementation of work activities of individuals and groups.

CWI/IWTU

- Many interviewees expressed concerns about the coordination of work with Rad Con in particular. Issues included:
  - Questioning their capabilities
  - Often holding up jobs because they are not ready or prepared
  - Communication channels are not always effective
- Interviewees indicated that many pre job briefings are held up because something else comes up and individuals leave. Prioritization of work needs to be clearer.
- Interviewees indicated that during construction a significant issue around work coordination was that work packages were not complete and not followed, issues were not closed out, and line management was not taking ownership of the issues.
- Interviewees indicated that procedural compliance was often lax during the construction phase and this was most likely due to that fact that the procedures were incomplete and being developed and because of schedule pressure they could not wait for the procedure to be issued.
- Data from the Coordination of Work Scale on the electronic survey indicated that there were statistically significant differences between the different CWI employee categories on this scale. Senior Management had significantly higher scores than respondents in the Supervisors/Managers/Team Leads, Non-Supervisory and Union categories.

B.5.5 Continuous Learning

Opportunities to learn about ways to ensure safety are sought out and implemented.

Positive Observations

Idaho Operations Office/IWTU

- Interviewees indicated that CWI has a formal trend program that DOE observes. Positive and negative trends are identified, resolutions proposed, corrective measures are identified, and DOE can go back into the program and evaluate progress.
- Lessons learned from project related Occurrence Reporting and Processing System (ORPS) reports are available, Federal Project Directors talk with each other and there have been several workshops on lessons learned from the various projects at Headquarters.
- Concept of grooming is a good example of organizational learning that saved projects a lot of money; usually the process went from turnover to test; intermediate step of grooming allows the process to be exercised but not to take credit for it, or use for performance verification, rather use to find out all sorts of things about the process.

CWI/IWTU

- Interviewees identified a lessons learned program, e.g. supervisor identified a new hazard in the building, hot nitrogen and emailed information about it; portable johns were tied down due to high winds.
- Interviewees indicated that there is a draft document on the Integrated Waste Project which contains lessons learned, management self-assessments, independent expert reviews; and they will be videoconferencing with other sites to discuss.
- Data on the Behavioral Anchored Rating Scale for Organizational Learning indicated that 100% of CWI Manager and 60% of CWI Non-Manager interviewee respondents provided positive ratings suggesting that they believe that individuals and groups of employees pay close attention to past behaviors and how they can be improved in the future. They believe that information about past activities is formalized and available for future reference.

Areas in Need of Attention

Idaho Operations Office/IWTU

- Interviewees indicated that some DOE Orders have not been changed even as a function of information that provides a basis for change, e.g., DOE Order does not state that the Contractor Employee Concerns Program must be independent.

CWI/IWTU

- Interviewees indicated that in general IWTU does not do a good job in learning from successes since they perceive there have been so few.
- While many interviewees identified the concept of lessons learned, the organization is missing opportunities to use this information as part of a learning process. Perceptions provided by interviewees included:
  - Missed opportunity to visit the subcontractor facility and review their operation before awarding the contract for assembling the blowers and again when they rebuilt it after the seals failed the first time.
  - Doing an extent of condition on paperwork throughout ICP; did a horrible job on paperwork on IWTU; URS did not do a good job on paperwork during construction; CWI has not done good job either, so need to do root cause analysis and corrective action, as directed by DOE.
  - Have to do root cause analysis and corrective action on work planning as well.
- Interviewees indicated that there have been significant issues in training due to the pressures on the project, e.g., a lot of procedural steps that got bypassed or missed because they were not in training; job and task analysis didn't always align with job checklists.
- Some interviewees indicated that the poor quality of instructors, lack of refresher training, and heavy reliance on self-study is indicative of how the value of training is perceived by management.

B.5.6   Environment for Raising Concerns

A safety conscious work environment is maintained where personnel feel free to raise safety concerns without the fear of retaliation, intimidation, harassment, or discrimination.

Positive Observations

Idaho Operations Office/Integrated Cleanup Project (ICP)/SBWTP

- Most interviewees clearly understand the mechanisms available to identify safety concerns, e.g., supervisors, managers, ECP, HR, and Hotline.
- Some interviewees perceive that CWI has a good Employee Concerns Program.

CWI/IWTU

- Most interviewees clearly understand the mechanisms available to identify safety concerns, e.g., supervisors, managers, ICARES, ECP, HR, and Hotline.
- Some interviewees indicated that they perceive that CWI has made efforts to eliminate or reduce the fear of retaliation through reminders via IClips, the ECP Manager spending more time in the field, and encouraging people to use different reporting routes.

Areas in Need of Attention

Idaho Operations Office/IWTU

- Some interviewees indicated that they have seen retribution on the contractor side in the past, not in IWTU but at other INL facilities, e.g., INTEC, ARP.
- Interviewees described that EM Contractors had twice as many employee concerns in the past year as NE contractors, 5 were from CWI, none of which were related to IWTU. Most of the concerns were around Human Resources/Management issues.
- Interviewees and observations by the Team indicated that the Headquarters ECP/EEO information is buried in ED (DOE's office of Economic Impact and Diversity) and that it doesn't get the recognition, visibility, or importance that it should.

CWI/IWTU

- Among CWI survey respondents, about 80% agreed with the statement that everyone in the organization is responsible for identifying problems. While overall this represents a higher percentage of people agreeing than disagreeing, it is still lower than is seen in other organizations and indicates that about 20% of the population did not fully agree with this statement (with 7% disagreeing and 13% being neutral on this statement).
- The statement on the electronic survey that management does not tolerate retaliation of any kind for raising concerns was agreed to by only 60% of the CWI survey respondents.
- Among CWI survey respondents only 52% of employees feel that they can openly challenge decisions made by management.
- Approximately 60% of CWI survey respondents believe that constructive criticism is encouraged.
- Approximately 68% of the CWI survey respondents agreed with the statement that they feel that they can approach the management team with concerns.
- Among CWI survey respondents 65% agreed with the statement related to management wants concerns reported.
- Approximately 60% of CWI survey respondents agreed with the statement that concerns raised are addressed.
- While there were no statistically significant differences among the SBWTP CWI Work Groups on any of the Safety Conscious Work Environment Questions from the electronic survey, the Maintenance and Operations Work Groups consistently had more negative responses to the questions.
- There were statistically significant differences between the SBWTP CWI Employee Categories on most of the Safety Conscious Work Environment Questions with Senior Management exhibiting more positive responses than the other categories of Supervisor/Manager/Team Lead, Non-Supervisory, and Union.

B.5.7   Effective Safety Communication

Communications maintain a focus on safety.

Positive Observations

Idaho Operations Office/IWTU

- Interviewees identified multiple mechanisms for communication in the ICP/SBWTP organization.
  - Frequent meetings are held with different organizations;
  - Direct interaction with individuals on the Federal and Contractor side;
  - Emails are used regularly for communication; and
  - Information through Plan of the Day meetings.
- Most interviewees indicated good communication and availability with DOE Headquarters personnel.

CWI/IWTU

- Interviewees identified multiple mechanisms for communication especially at the Division Level. They included:
  - Meetings
  - Emails
  - Telephone calls
  - Open door policy
  - Plan of Day Meetings
  - Face to face interactions
- Some interviewees indicated that they believe that they are well informed about what is going on in the Project.
- Interviewees identified that some organizational changes are effectively communicated, e.g., changes in the use of PPE were communicated via email, posted signage and in meetings.
- Observations by the Team indicated that communications among the Operations personnel during their activities was very good. Three way communication with acknowledgements were used and turnovers were conducted in a very professional manner.
- Data from the Behavioral Rating Scale on Communication indicated that 100% of the CWI Manager interviewee respondents who completed that scale had positive perceptions about the exchange of information, both formal and informal, between the different departments or units in the project, including the top-down and bottom-up communication networks.

Areas in Need of Attention

Idaho Operations Office/IWTU

- Data from the Behavioral Rating Scale on Communication indicated that 68% of the DOE interviewee respondents who completed that scale had positive perceptions about the exchange of information, both formal and informal, between the different departments or units in the project, including the top-down and bottom-up communication networks.

CWI/IWTU

- Several interviewees indicated that the amount of information that is received depends upon who you work for and where you work.
    - In Rad Con it is dependent on whether the individual is on shift or straight days, e.g., those on shift get a lot of information from work crew;
    - Some Rad Con foremen email instructions but the email doesn't get sent to those on straight days – ex. didn't know that shift crews were pulling CAM filters daily.
    - Interviewees indicated that the Rad Con Technicians don't always receive shift information, e.g., practiced posting of doors and provided survey data without doing full surveys; one day procedure changed and required full survey data but RCT crew didn't receive information, did not conduct full survey and got into trouble over it.
- Several interviewees indicated that it is sometimes difficult to focus and understand priorities, e.g. work crews are getting briefed while morning POD is going on, changes and redirections occur, accept and acknowledge but don't always get information in timely manner or understand why the change occurred.
- Observations by the Team of Operations and Maintenance activities during the off gas blower startup indicated a breakdown of communications between Maintenance and Operations concerning the increasing seal temperatures during the startup. Maintenance did not inform Operations of the rising temperatures over the span of the entire activity.
- Data from the electronic survey on several of the Communication Scales indicated that CWI SBWTP survey respondents had some of the lowest scores across the DOE database on their opinions about perceived Accuracy in Communication and overall Satisfaction in Communication.
- Statistically significant differences were obtained between CWI Employee Categories on the electronic survey on the Satisfaction in Communication Scale. Survey respondents in the Senior Management Category had significantly higher scores on their opinions about satisfaction in communication than respondents in the Supervisor/Manager/Team Lead, Non-Supervisory, and Union Categories. This was the trend across the other communication scales as well.

B.5.8   Respectful Work Environment

Trust and respect permeate the organization

Positive Observations

Idaho Operations Office/IWTU

- Some interviewees described good working relationships with the CWI Contractor Organization. Issues can usually be worked out before they become too problematic.

CWI/IWTU
- Interviewees indicated that the relationship between CWI Management and the union was cooperative. Meetings are held regularly to discuss issues and resolutions.

Areas in Need of Attention

Idaho Operations Office/Integrated Cleanup Project (ICP)/SBWTP

- While not able to draw organizational conclusions from the electronic survey data due to the overall low response rate (i.e., less than 50%) obtained among the DOE ICP/SBWTP survey respondents, those that did choose to take the survey indicated low scores on Job Satisfaction.

- Similarly the DOE survey respondents indicated low scores on their perceptions of Trust in Communication regarding the freedom they feel to discuss the problems and difficulties in their jobs with an immediate supervisor without jeopardy.

  CWI/IWTU

- Results from the Communication Trust Scale on the electronic survey indicated statistically significant differences between work groups among CWI survey respondents. Respondents in the Support Work Group had significantly more negative perceptions regarding the freedom they feel to discuss the problem and difficulties in their jobs with an immediate supervisor without jeopardy compared to respondents in the Operations and Engineering Work Groups. While not statistically significant, respondents in the Maintenance Work Group had lower scores on this scale as well. This was the only scale on which CWI Work Groups statistically significantly differed from each other.
- Results on the electronic survey for CWI survey respondents indicated that overall job satisfaction scores were on the low end of the scores obtained in the database of other similar organizations.
- Results obtained on the Communication-Accuracy Scale from the electronic survey indicated that overall CWI survey respondents have negative perceptions of the accuracy of information that they receive from other organizational levels (superiors, subordinates, and peers).
- Results across the CWI organization indicate an overall gap between the perceptions of those in Senior Management versus all other employee categories, including those in the Supervisor/Manager/Team Lead category.

B.5.9 Questioning Attitude

Individuals avoid complacency and continuously challenging existing conditions and activities in order to identify discrepancies that might result in error or inappropriate action.

Positive Observations

  Idaho Operations Office/IWTU

- Interviewees indicated that line management is supportive of their identifying issues and deficiencies and documenting conditions and activities for follow up.

  CWI/IWTU

- Some examples of fostering an environment where a questioning attitude is desired and accepted were described and observed by the Team. Observations of post maintenance testing on the off gas blower indicated that the appropriate personnel from operations, engineering and safety along with the maintenance technicians were involved in the decisions on how to execute portions of the test.

Areas in Need of Attention

  Integrated Cleanup Project (ICP)/SBWTP

- Several interviewees indicated that they believed that DOE was sometimes compromising their oversight activities because of schedule and cost pressures. They believed this to be true especially during the construction phase of the project.

CWI/IWTU

- During this Assessment the Team identified several examples of the lack of a questioning attitude.
    - o During the crew and pre-job briefings it was clear that the 260B seal would be taken to the IWTU Director's office where the vendor would perform the seal inspection. However, no one ever questioned why it was necessary to perform this inspection in the Director's office since there were closer more suitable locations in which to conduct this work.
    - o During set up of the spider crane, a loud audible alarm (over 95dBA) was actuated and maintained for approximately a 10 minute period. No questioning or discussion of this noise hazard or the use of hearing protection was evident. However, later in the day when the operation of the same crane produced a more modest noise level, everyone was required to wear hearing protection. The operating noise level had been identified in the work package, but not the noise level associated with the equipment alarms.
    - o Two lapel monitors for heavy equipment operators to wear to measure their exposure to ambient gas levels were calibrated for nitrogen instead of carbon monoxide. In the haste to grab the monitors, the foreman never checked or questioned if he had the correct monitor.
    - o During the seal removal task, Foreign Material Exclusion (FME) controls were required to ensure that no materials entered the blower during maintenance. Two FME subject matter experts attended the pre-job briefing and were assigned to establish the boundary and monitor the work area. When questioned by the Team they could not identify the criteria or trigger for when FME was required and indicated that it was at management's discretion.

B.6   References

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