



**ASSESSMENT
OF A
SAFETY CONSCIOUS
WORK ENVIRONMENT
AT THE
HANFORD WASTE
TREATMENT PLANT**

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TABLE OF CONTENTS

I. Introduction.....	1
II. Avenues Available for Making Technical Comments, Identifying Technical Issues or Raising Safety Concerns.....	2
III. Effectiveness of Avenues Available for Raising Issues/Concerns and Experience Using Them.....	3
A. Technical Processes for Raising Technical Issues/Concerns.....	3
1. EDR, ISM and TIEF Processes.....	3
2. PIER and DPO Processes.....	4
B. Employee Concerns Program	5
1. Interviewees with no Personal Experience with ECP.....	5
2. Interviewees with Personal Experience with ECP.....	6
IV. Training.....	7
A. Availability of Training on Raising and Resolving Technical Issues and Safety Concerns	7
B. Effectiveness of Training.....	8
V. Policies and Procedures	9
A. Availability of Policies and Procedures.....	9
B. Effectiveness of Policies and Procedures	9
VI. Identification and Raising of Technical, Safety or Compliance Concerns.....	10
A. Management Encouragement of Identification/Raising Concerns	10
B. Raising of Concerns to Management.....	11
C. Confidence That the Project Effectively Resolves Issues.....	12
D. Hesitancy to Raise Safety or Compliance Concerns to Management.....	12
E. Belief Regarding Others' Willingness To Raise Concerns.....	13
F. Retaliation for Raising Issues or Concerns.....	13
VII. Nuclear Safety and Quality Culture at WTP.....	14
VIII. Suggestions.	14
A. Training.....	15
B. Modifications To Resolution Process.	15
C. Coordination/Communication.....	15
D. Positive Reinforcement.....	16
IX. Conclusion and Pillsbury Recommendations	16

I. INTRODUCTION

This report describes and analyzes the responses of a cross section of Bechtel National, Inc. (“BNI”) and URS employees to interviews conducted as part of an assessment of the Safety Conscious Work Environment within the engineering, technology and operations groups at the Waste Treatment Plant (WTP) Project located at Hanford, Washington.

The assessment consisted of interviews with 121 BNI and URS employees across the three WTP offices: Richland, Oakland and Frederick. At the Richland office, both BNI and URS employees were interviewed. The interviewees represent a wide cross section of groups, including: Civil, Structural, Architecture; Controls & Instrumentation; Electrical; Process Engineering; Mechanical Systems; Plant Design; Environmental and Nuclear Safety; Plant Operations; Equipment Group; and Research and Technology. The interviewees also represent a wide cross section of positions, from staff to lead engineers, supervisors and managers.

The interviewees were structured on a 19-question protocol (attached), which addressed issues such as: avenues available for making comments and identifying issues and raising concerns; the effectiveness of these avenues; the availability and effective of training and policies and procedures relating to identifying and raising issues or concerns; the interviewees’ experience in raising issues or concerns; and the overall perception of a safety conscious work environment at WTP. Interviewees also had a chance to make suggestions for improvement of the safety conscious work environment at WTP. The responses to these questions are discussed and analyzed below.

II. PROCESS

This assessment was designed to provide a more in-depth evaluation than had been possible by means of the all-employee computer based questionnaire surveys conducted in prior years at WTP. Individuals participating in this assessment were afforded the opportunity to provide individual answers in a personal setting with trained interviewers on a confidential basis. Participants included a random sampling of individuals in the engineering, technical and operations groups at the WTP.

The initial roster of employees used for this assessment included all employees of BNI and URS in all engineering disciplines, plus process engineering and technology, environmental and nuclear safety, plant engineering, and all plant operations groups. The total population in these groups is approximately 1200 employees. The roster was provided to the BSII Internal Audit (IA) Manager, who employed a standard program for selecting a statistical sampling of approximately 10% of the total population. Employees were selected randomly from the list, using a methodology designed to ensure the inclusion of employees from each location (Richland, Oakland, and Frederick), both employers (BNI and URS) and all engineering, technical and operational functional groups.

Once selected, the employees were contacted to arrange an individual, closed-door interview with one of five BSII internal audit investigators. The investigators are all

trained and experienced in investigations, assessments and employee interviews. Each interview followed a prescribed format based on the 19-question protocol. The questions were designed to be structured enough to gather data that could be compiled and compared across the population interviewed, yet open-ended enough to elicit individual opinions, suggestions and concerns.

Confidentiality of the information provided was assured by the following process. The random selection of participants and the interviews of those participants were conducted by off-project interviewers from BSII IA, who did not record the names of any employees on the individual interview sheets. None of the names of any interviewed employee were provided to Pillsbury, the outside consultant evaluating the data. The individual interview sheets provided to Pillsbury were coded only with the interviewee's group (i.e., ENS, Ops, Equipment Group), staff or management, employer (BNI or URS) and location (Richland, Frederick or Oakland).

When the IA interviewers identified that some negative data had been elicited in the first day of interviews, additional names were randomly selected by IA to be added to the interview list from the work groups from which the data had originated. In addition to the employees randomly selected for interviews, there were a handful of employees who volunteered to participate.

III. AVENUES AVAILABLE FOR MAKING TECHNICAL COMMENTS, IDENTIFYING TECHNICAL ISSUES OR RAISING SAFETY CONCERNS

The individuals interviewed each identified several avenues available at WTP for making technical comments, identifying technical issues or raising safety concerns. Interviewees expressed that there is "a myriad of avenues" for raising concerns at WTP and that "many checks and balances" exist between these avenues. One interviewee noted that s/he worked on 40+ projects in his/her career and has never seen a better project that has so many avenues available for raising issues and concerns.

Approximately 75% of the individuals interviewed identified their immediate supervisor and line of management as an avenue to raise concerns and issues. Many of these individuals noted their immediate supervisor as the initial and main avenue for issue resolution. For example, one employee noted: "Most concerns to go my supervisor. This is what I've always done first and it works." Another noted that that s/he would "go to management first and then always up the chain." A number of interviewees expressly stated that their supervisor has an open door policy. The majority of interviewees also identified technical processes for addressing and resolving issues. These included: Project Issues Evaluation Reporting (PIER), Differing Professional Opinion (DPO), Technical Issues Evaluation Form (TIEF), Action Tracking System (ATS), Engineering Design Review (EDR), Corrective Action Report (CARs), Nonconformance Report (NCR), Field Change Request (FCR), Document Change Notice (DCN), and Comment Resolution Form (CRF).. Some interviewees identified project-specific processes, such as weekly safety meetings, the Integrated Safety Management (ISM) process, an internal tracking system for their project and the ability to post questions on the WTP website for their project sections. One interviewee stated that he was impressed with the number of

methods his project created for addressing technical comments and issues. Interviewees also identified BNI programs, such as the Risk Management program and the Security and Safeguards programs, as available avenues. Several interviewees noted the ability to raise concerns with the safety department.

In addition to management and technical processes and programs, some interviewees identified ECP as an avenue to elevate issues. However, only 20% of the interviewees identified ECP in response to the question about available avenues to raise comments, issues or concerns. Some interviewees distinguished between ECP and the other processes by noting that processes such as PIER and TIEF serve for the resolution of technical concerns, while ECP addresses non-technical issues. Interviewees also cited ethics hotlines as an available avenue and a few listed Human Resources and Labor Relations.

Approximately 11% of the interviewees also noted that one can raise concerns to DOE. DOE usually appeared at the end of the list of avenues and some interviewees noted that they would raise concerns to DOE only if they were not resolved internally.

III. EFFECTIVENESS OF AVENUES AVAILABLE FOR RAISING ISSUES/CONCERNS AND EXPERIENCE USING THEM

A. Technical Processes for Raising Technical Issues/Concerns

There appears to be a consensus among 90% of the interviewees that the processes available at WTP for raising technical issues, such as EDR, ISM, TIEF, PIER and DPO, are effective avenues for doing so. Approximately 86% of the individuals interviewed stated that they have personally used one or more of these processes and had a positive experience in achieving resolution of the technical issue or concern. Most of these individuals raised issues through these processes as part of their job. About 4% of the interviewees had not had a personal experience with these processes; however, some of these individuals identified themselves as either interns or new hires.

There were four interviewees who did not believe the technical processes in general were fully effective. An interviewee whose job duties include resolving technical issues stated that some issues appear to recur, which meant to them that resolution of issues might not always be complete. Another interviewee stated that although the technical processes available are effective for raising, tracking and resolving issues, it often takes a long time to get issues resolved using these processes. A third interviewee indicated that the processes don't lend themselves to raising conceptual concerns and that they are effective only if the individual raising the concern has identified the exact issue. Finally, one interviewee stated that technical issues the interviewee raised several years ago were not taken seriously and that no one would take responsibility in resolving them. However, this interviewee further stated that the process has improved and that, currently, issues are being appropriately addressed.

1. EDR, ISM and TIEF Processes

Approximately 90% of the individuals interviewed stated that the EDR, ISM and TIEF processes are effective avenues for raising technical issues and concerns. Most of these interviewees had some personal experience with one or more of these processes.

This was especially true for the EDR process. Based on the interviews, EDR is a frequently used process by BNI employees and contractors. Interviewees thought that the EDR process is a “very effective,” “very useful” and adequately proceduralized process and that it allowed the employee raising a technical issue to get “valid comments back.” One interviewee stated that employees are supportive of those who originate EDRs and everyone works together to resolve the issue. Several interviewees - approximately 5% of individuals interviewed - noted some issues with the EDR process. These issues were as follows: there are so many EDRs issued that it takes time to get final approvals; EDRs are sent to too many groups that they do not affect, resulting in wasted time and effort; EDRs don’t always reach the right people; and some people responding to EDRs do not provide adequate comments.

The ISM process also received high marks for its effectiveness. A sizeable number of the interviewees used the process and others had familiarity with it. Almost all of the interviewees that used the ISM process were satisfied with its success in resolving technical issues. One interviewee noted that ISM is “a very effective means of resolving issues between groups and fostering communication.” Another interviewee stated that ISM is a “good process for thinking about your work and may lead you to think of [an issue] to be raised.” Another interviewee identified ISM as a process that has allowed his/her group to raise issues on certain designs and to effectively discuss these issues within the group. Only one interviewee noted that the ISM process for his/her project was “not as rigorous” as s/he had seen as other projects. This interviewee suggested more rigorous preparation for ISM meetings and better documentation would improve the outcomes.

Very few interviewees appeared to be familiar with TIEF. The few who had used the TIEF process believed that it was effective.

2. PIER and DPO Processes

The PIER process, like the EDR process, appears to be one of the preferred processes for raising technical issues or concerns at WTP and approximately 85% of the interviewees had either used the process or were familiar with it.

About 94% of interviewees that had either used or were familiar with the PIER process stated that the PIER process is very effective for raising technical issues or concerns. Interviewees believe that PIER is “one of the best processes in place” and the best way to raise a safety issue. Based on the interviewees’ comments, the PIER process is viewed as a great tool to track safety issues, ensuring that they do not fall through the cracks, and allows for issues to be effectively resolved. One interviewee noted that s/he liked the PIER approach because everyone had input in resolving the issue identified. Another interviewee liked the fact that one can raise concerns anonymously through the PIER

process. Interviewees noted that they were encouraged by their supervisors to identify problems and use the PIER process.

One interviewee stated that PIERs are an effective mechanism to focus management's attention on technical issues. Several interviewees noted some inadequacies in or downsides to the PIER process:

- One issue voiced by several interviewees was that PIERs were overused. Several interviewees stated that originators are not always knowledgeable about the issue s/he was raising and thus, at times, there have been PIERs raised that had no basis.
- Another issue voiced was that the responses are not always on point and that the PIERs don't always go to the right people.
- Another issue voiced was that the PIER process was cumbersome and required tenaciousness. Several interviewees noted that the number of PIERs can be overwhelming and addressing them can take up a lot of time. One interviewee stated that the process has become too paperwork intensive and that the amount of paperwork does not necessarily add quality to the end product.
- Another interviewee noted that, in the PIER process, the person raising the PIER is not involved in closing PIER. This interviewee felt that the PIER originator should have a part in the closing of the issue; otherwise, the issue could be misinterpreted.
- One interviewee noted that PIER can create problems when the issues circle back to the originator by creating reluctance to raise concerns in the future.
- Another interviewee noted that PIERs do not always go to his department when they should.

Most individuals interviewed had never used the DPO process or were not aware of it. The small percentage of the interviewees who did have experience with the DPO process, found it to be effective in raising and resolving concerns, and did not have any negative comments regarding the process.

B. Employee Concerns Program

The overwhelming majority of interviewees have never used ECP. Only 6.5% of the interviewees surveyed had ever used the program. There is a discrepancy between the views of interviewees with no personal experience with ECP and those who have used the program: the majority of the interviewees who have not used the program have a positive impression of the program, while more than half of the interviewees who have used the program have a negative impression of it. There appears a perception among both groups that ECP is better suited for non-technical or HR concerns. 1. Interviewees with no Personal Experience with ECP

Of the interviewees who had never participated in ECP, the majority had the impression that the program was effective. This impression was based either on hearing about the experience of colleagues who used the program or on a general notion that it is an available confidential avenue for raising concerns and that it is important to have such a “safe avenue” at WTP. One interviewee noted that ECP is “a way to empower those who need it.” Several interviewees mentioned that ECP is very visible and well advertised and that they know how to use it, should a need arise. One interviewee stated that it is a good way to get management’s attention if needed. Many interviewees had a view of ECP as a “last resort” and noted that they have never had to use the program because they were able to resolve issues directly with management.

A number of interviewees who had never participated in ECP noted that it is only a good avenue for raising personnel or HR issues, but not technical concerns. These individuals did not feel that ECP had the technical aptitude to address technical concerns. One interviewee stated that, although the process appears effective, it can be awkward because engineers don’t communicate well in that type of process.

A significant percentage of interviewees who had never participated in ECP had no opinion of the program. Two interviewees who commented on the program appear to have confused it with Human Resources.

Two interviewees stated that they did not feel that ECP was an effective avenue for raising concerns. One interviewee believes, based on the experiences of his colleagues over the last 10 years, that the program is “slow and too methodical.” The other interviewee stated ECP was ineffective and that a serious concern should go to DOE directly.

1. Interviewees with Personal Experience with ECP

Of the interviewees who had personal experience with ECP, four interviewees found the program to be effective and five interviewees did not.

Of the interviewees who found the program effective, one of them liked the fact that it was confidential. Another interviewee stated that the program performs its function and was responsive, communicating back well. The third noted that s/he found the process unbiased. The fourth stated that the final resolution of the concern was satisfactory.

The employees who found ECP to be ineffective reached that conclusion for different reasons:

- One of the employees did not consider ECP an effective avenue to address concerns in his/her department. (any reason given for this opinion?)
- Another employee who had previously raised a technical issue through the program did not feel that ECP was not effective in addressing the technical issue. It is important to note that this employee also raised the issue via other avenues, each of which did not address the issue to his/her satisfaction.

- A third interviewee had brought a concern to ECP three years ago, which s/he stated had not been addressed. The interviewee also noted that s/he was not given feedback on the concern.
- The fourth interviewee was the subject of an ECP concern brought by one of his/her subordinates who had tardiness issues. The interviewee felt that the subordinate was too well protected in the process.
- The fifth interviewee was also the subject of an ECP concern. The interviewee explained that s/he finds ECP ineffective because, by the time the issue arrives at ECP, there is too much emotion around the issue. The interviewee had four allegations brought against him/her – including allegations of waste, fraud and abuse – and stated that all four were found to be without merit and that the resolution took a lot of peoples’ time and energy. The interviewee also felt that the measure of how many people go to ECP measures the effectiveness of the management team – i.e., the management team is not effectively nipping issues in the bud if their subordinates are bringing concerns to ECP.

IV. TRAINING

A. Availability of Training on Raising and Resolving Technical Issues and Safety Concerns

All but one of all of the individuals interviewed stated that they received a significant amount of training on the raising and resolution of technical issues and safety concerns. Most of the interviewees cited several types of training that they’ve received on this issue. One interviewee stated that training on identifying, raising and resolving concerns is reinforced daily and constantly keeps employees aware of issues of safety and quality as first priorities. Another interviewee stated: “I’ve never see training like this anywhere else, the first three months at BNI that’s what I did.”

Interviewees cited a great variety of training they have received. These included various work shops and classes, including: a session on how to raise concerns during orientation and refreshers on the topic; ethics training and ECP training workshops; training on technical processes, such as ISM training; annual requirement to take HGET (Hanford General Employee Training); safety training; causal analysis workshop; General Employee Training (GET); and a recent video message by Mr. Russo on raising and resolving technical and issues and safety. Interviewees also mentioned receiving computer based training (CBT) on raising issues and updates on changes to procedures through newsletters and other type of correspondence, such as e-mail. Several interviewees discussed getting this type of training through their weekly and monthly group meetings, where they discuss safety, share lessons learned and any changes to procedures. Interviewees also discussed mandatory reading of procedures on technical processes for raising concerns. Of all the individuals interviewed, only one employee stated that s/he was not aware of any training.

B. Effectiveness of Training

The majority of the individuals interviewed (approximately 60%) found the training received on raising concerns to be effective. Interviewees stated that the training is “thorough, complete, comprehensive” and an “effective method to make you aware of what tools are out there,” that it provides enough information to understand how to raise issue, and that it “highlights that there is not one way to handle an issue” – if you hit a dead end, there are other ways to raise a concern. One interviewee liked that there was a test administered at the end to ensure that the material presented was understood.

The interviewees noted that they are continuously kept updated and informed to make sure that they are working to the latest standards and specifications. Several interviewees liked that there was an “open environment” and noted that the sharing of lessons learned reinforces the concepts presented. Interviewees noted that the training is well advertised. One interviewee found the EDR training especially effective, as they were taught step by step how to change documents. Another interviewee stated that the training was “invaluable for the person just coming in to BNI.”

There were a sizeable number of employees that saw some issues or had suggestions to improve the training process. The biggest issue voiced that there was too much reading and that it was difficult to absorb and process all the required reading. Several individuals noted that they learn better when actually applying procedures, rather than simply reading them. One interviewee stated that training can be overwhelming for new hires, with more than 100 procedures to read and understand. This interviewee noted that this type of intensive training may work better for someone who is a transfer from another project and is familiar with the process, but not for someone who is a college hire. One interviewee noted that “some procedures should be read when you need them, but not all right away.”

Several interviewees suggested that training effectiveness would be benefitted by an open forum. One employee stated that an hour of discussion would be more effective than computer based training. Another employee suggested a few more informal follow up sessions that would be focused on group discussion, rather than classroom training.

One interviewee voiced a concern that training on raising concerns is constantly reinforced by management, but that there is not sufficient encouragement on the technical side. Another interviewee voiced that, although people understand what options for raising concerns are available, they may not know the best avenue to pursue it – i.e., when to raise the issue via ECP versus initially going through management. Another interviewee noted that processes learned during the training are not always used. S/he gave the example of the STOP work card, which s/he believed was rarely used.

Two interviewees did not find training very effective. One interviewee did not provide a reason for this belief or any further comments. Another interviewee specifically noted that HGET training was “mediocre.” This interviewee also did not provide a reason for this statement.

V. POLICIES AND PROCEDURES

A. Availability of Policies and Procedures

All the interviewees surveyed stated that the Project has many policies and procedures relating to identifying technical issues or raising safety concerns. Interviewees noted that the Project has procedures on “just about every subject.” Interviewees noted that newcomers to BNI receive mandatory training on which procedures are available for identifying technical issues or raising safety concerns and how to use these procedures.

Employees identified a number of policies and procedures relating to identifying technical issues or raising safety concerns. These included: Employee Concerns procedures and technical procedures, such as PIER, EDR, ISM, Risk Management process and START Card procedures.

Many interviewees noted that all of the policies and procedures are easily accessible through BechWeb. A number of interviewees could not identify the specific procedures relating to identifying technical issues or raising safety concerns, but stated that they knew how to find them on BecWeb.

B. Effectiveness of Policies and Procedures

The majority of the interviewees found the policies and procedures to be effective for identifying technical issues and safety concerns. The interviewees found the procedures to be “quite thorough” and “fairly easy to use.” Several interviewees identified as a strong positive that the procedures put safety and quality first, ahead of cost and schedule. One interviewee reinforced that no one is ever asked to compromise safety and that, in eight years on the job, s/he had seen all safety concerns properly addressed. Another interviewee stated that the procedures were “terrific” and that WTP was superior to any place s/he has worked in providing effective procedures. One other interviewee highlighted the fact that the procedures provide anonymous avenues for individuals to raise concerns.

However, several interviewees – approximately 10% of those interviewed - did express some criticisms regarding the policies and procedures available for identifying technical issues and safety concerns. The chief criticism, just as with training, was that there were too many procedures, which made it difficult to follow them and keep track. A related issue voiced was that the procedures are “too lengthy” and “convoluted.” Other interviewees, however, noted that the procedures were “too high level” and “sometimes vague and subject to interpretation.” One of these interviewees suggested that providing examples in the procedures would aid employees in understanding whether they were completing the forms correctly. Another interviewee stated that the procedures were too “generic” and suggested that they be more tailored to each group.

One interviewee addressed the EDR procedure specifically, noting that it can be problematic with respect to the turn around requirement. In the interviewee’s opinion, s/he and his/her peers are held accountable for meeting deadlines over which they have no control.

Another interviewee stated that, although the procedures are highly effective in identifying and raising technical issues, the closure process has bias toward moving forward as opposed to spending time and money. The interviewee noted that the Project moves forward on “gray areas,” but recognized that this is part of risk management, as the Project must move forward.

One interviewee stated that the policies and procedures are not effective as they used to be. This individual did not elaborate on this comment.

VI. IDENTIFICATION AND RAISING OF TECHNICAL, SAFETY OR COMPLIANCE CONCERNS

A. Management Encouragement of Identification/Raising Concerns

Over 95% of the individuals interviewed reported that their immediate supervisor encourages them to identify and raise technical, safety and compliance concerns. A number of interviewees identified weekly staff meetings as one such avenue of encouragement. Other interviewees noted that their supervisors have expressly told them to come to see them with any such issues. In addition, a number of interviewees stated that they were encouraged to raise issues, not just through their supervisor’s words, but also by their supervisor’s behavior. Many noted their immediate supervisors had an open-door policy. Many interviewees also said that their supervisors encouraged a questioning attitude.

A few interviewees, while noting that they felt comfortable raising issues with their immediate supervisors and had been appropriately treated when raising issues, did say that they had not been specifically encouraged by their immediate supervisors to raise issues. One interviewee simply answered that s/he was not encouraged by his/her immediate supervisor to raise complaints.

Approximately 95% of interviewees stated that the management chain and Project management have also encouraged them to report any safety or technical issues. Specifically, numerous interviewees mentioned the all-hands meetings where such reporting is regularly encouraged. Many interviewees mentioned receiving a number of emails from Project management (some said too many) and some recounted seeing videos (including one featuring Mr. Russo), expressly encouraging reporting. One interviewee in Frederick, MD noted that Mr. Russo had been to that office personally three (3) times and actively encourages reporting.

There were, however, a few interviewees who stated that Project management said the right things, but did not follow up on those words with action. They suggested that they received a number of emails from Project management, and that Project management talked-the-talk, but that really, Project management did not want to hear about issues that would negatively affect schedule and/or cost. For example, one interviewee stated that if you raise too many concerns you are viewed as a bad apple.

One interviewee noted that Project management sometimes pushes back on issues, but pointed out that these occurrences involved circumstances where there was a difference

of opinion. Another interviewee suggested that Project management could do better with respect to notifying individuals regarding the resolution of issues. Another interviewee said that as the design of the plant is completed, safety issues need to be large to get attention. One interviewee said that Project management encouraged safety issues being raised, but only somewhat encouraged the raising of design issues.

One of the interviewees who thought that Project management only paid lip service to encouraging complaints and one individual who declined to be interviewed because he “did not want to lose his job” were both located in Oakland. Although the majority of the interviewees in Oakland stated that they were encouraged by all levels of management to raise complaints, the statements seemed slightly less enthusiastic than those of interviewee statements in other locations. These factors combined may indicate that Oakland employees/managers would benefit from some additional training/encouragement with respect to raising safety and technical issues.

B. Raising of Concerns to Management

Roughly 55% of interviewees stated that they had raised technical, safety or compliance concern(s) to their supervisor or Project management in the past-- a number of them on multiple occasions. Six interviewees responded that they had raised issues only in connection with their regular job duties, indicating that they felt raising such concerns were a part of their specific job responsibilities. Some examples of the types of issues raised include: safety issues, technical issues, design issues, procedural issues, code issues, an evaporator issue relating to contaminants, calculation issues and roof construction and fire barrier issues.

Of the many interviewees who reported raising technical, safety or compliance concerns to their supervisor or Project management in the past, all but four felt that their issues or concerns were addressed effectively and in a timely manner. For example, when one interviewee reported a technical issue the employee reported that he/she was encouraged to raise the concern, was given help to research the issue and given additional help to present his/her findings. Another interviewee reported that when s/he raised a safety issue regarding the interviewee’s concern about the validity of a particular calculation, management was open to correcting the calculation, if necessary. A number of other interviewees reported that their raised issues were well-received and that they were happy or satisfied with the resolution of the reported issue.

A few interviewees reported less positive experiences. Two interviewees reported that issues they raised were not addressed. One of these issues is plugging in process piping. Another interviewee reported that he/she does not know whether the issues the interviewee raised were addressed (apparently the interviewee was not informed one way or the other). Another interviewee noted that he/she raised a concern three (3) years ago that has yet to be resolved.

C. Confidence That the Project Effectively Resolves Issues

Approximately 85-90% of interviewees said that they believe that the Project effectively resolves raised issues. For example, one interviewee noted that the interviewee had personally dealt with 1,000 changes, 50 Supplier Deviation Disposition Requests (SDDR's) and over 1,500 DCN's and that every last one was reviewed and addressed. Some interviewees, however, had divergent opinions.

A number of interviewees noted that timeliness of the solution of issues is a problem (although some attributed that to the nuclear environment). For example, one interviewee noted that an issue regarding "Pulse Jet Mixing" was discovered very early on in the Project but is still not resolved. Other interviewees expressed somewhat related concerns with respect to follow-through on reported issues. A few interviewees reported what they perceive to be a lack of ownership of resolution of any particular issues and noted that individuals really have to "persevere" to get their issue resolved. One interviewee noted that discussions about issues occur, but that the loop is never closed. The same interviewee felt that clarification of issues and tracking of reported issues needs to be improved. A few interviewees pointed out that every two weeks there is a meeting held to discuss ATS/PIERS and that it seems like the same issues are brought up again and again, which makes them wonder whether the issues are being effectively resolved. One interviewee characterized it as a "mixed-bag," another expressed the view that the resolution rate is "50-50." A few interviewees pointed out that issues of safety or technical issues that must be resolved in order for the plant to function are resolved, but that issues that are reported that do not meet this threshold of importance are not always resolved. One of these interviewees noted that this is appropriate because a line must be drawn somewhere. A few interviewees also stated that issues could be more effectively and efficiently resolved if there was better communication between groups and departments.

One interviewee (who also expressed the belief that Dr. Tamosaitis was retaliated against) reported that he/she does not have confidence that the Project effectively resolves issues. Another interviewee reported that he/she personally has confidence that issues were effectively resolved, but noted "rumors" to the contrary.

D. Hesitancy to Raise Safety or Compliance Concerns to Management

About 95% of interviewees unequivocally stated that they have no reluctance whatsoever to report any such concerns.

One interviewee expressed reluctance to report a concern, referencing Dr. Tamosaitis' reassignment. Another interviewee reported that he/she was (and that others were) reluctant to report, because if you report they get tired of you and retaliate (by shifting you to a bad job, night shift, etc.). One interviewee (who volunteered to be included and is not in a technical discipline) reported that he/she was reluctant to report because he/she has been informed after raising numerous issues that he/she was a problem employee and did not get a raise. This interviewee also reported that although his/her manager told the interviewee to write a PIER, another employee told the interviewee not to because his/her

job was in jeopardy and that he/she better know what he/she is talking about before raising a concern.

One interviewee reported potential reluctance to report a concern if the interviewee was not sure that he/she fully understood the issue (the same interviewee reported going through an uncomfortable situation that the interviewee felt could have been handled better—although the interviewee would not classify the situation as retaliation). Another interviewee stated a reluctance to raise a concern based on his/her past history. The same interviewee reports having to defend himself/herself many years ago in connection with raising a concern although there were no real repercussions from reporting the issue. A different interviewee reported possible hesitation to raise concerns based on the interviewee's general past (not past with the company) and minority status, but noted there was no specific basis for this hesitation. Another interviewee reported a reluctance to report outside of the interviewee's chain of management.

E. Belief Regarding Others' Willingness To Raise Concerns

Approximately 90% of interviewees reported that they were not aware of any reluctance on the part of employees to raise safety and technical concerns. A number of interviewees pointed out that they were aware of employees regularly pointing out concerns and that this was an embedded aspect of company culture.

As noted above, one interviewee stated that employees were reluctant to report issues because if you report they get tired of you and retaliate (by shifting you to a bad job, night shift, etc.). A few interviewees stated their belief that there was currently an environment where individuals would be less likely to raise issues. One interviewee tied this new reluctance directly to Dr. Tamosaitis' reassignment, which that interviewee reported has had a chilling effect on reporting.

A few interviewees noted that some individuals were just too shy to raise complaints (stating that this was nothing more than a personality issue) or that some individuals were afraid of being labeled as incompetent if they raised complaints (but stated that this fear was unjustified). Some interviewees stated their belief that younger, new employees may be reluctant to raise concerns due to inexperience. Others stated that some individuals may be fearful to raise concerns over fear of losing their jobs-but provided no specifics. One interviewee said that he/she had heard others say that they fear for their jobs in connection with raising an issue, but that this fear was unjustified because no one loses their job with BNI for raising concerns. One interviewee reported an incident about a year ago that caused individuals to be hesitant about raising concerns because he/she perceived management to be focused on the manner in which a concern was raised, rather than what concern was raised. One interviewee noted that others might be reluctant to report concerns due to the amount of work (including paperwork) involved.

F. Retaliation for Raising Issues or Concerns

Only five interviewees indicated that they ever had, or might have, personally experienced retaliation in connection with raising any concerns. One interviewee

reported that he/she had been previously reassigned from another project for asking too many questions. A different interviewee stated that many years ago the interviewee was threatened by a supervisor with reassignment and was eventually moved (but was happy with the move). Another interviewee responded that it was difficult to prove retaliation but that the interviewee believes it exists and that making reports negatively affects things like promotions. One interviewee stated that he/she might have been retaliated against indirectly for raising concerns because the interviewee did not receive a raise this year. Another interviewee stated that he/she has been retaliated against for raising concerns—noting that the interviewee was eligible for early/enhanced retirement from one BNI entity and had a job offer from another, but was told that offer would be rescinded if the interviewee took the package (even though the interviewee had a waiver).

Almost all interviewees stated that they were personally unaware of anyone who had been retaliated against for raising concerns. A number of interviewees mentioned, however, that they had heard about Dr. Tamosaitis' claims. One interviewee expressed that s/he believes Dr. Tamosaitis was retaliated against for raising technical issues. That same interviewee expressed his/her view that another individual had been pushed off the Project previously for raising technical issues. A few other interviewees mentioned hearing about retaliation, but could not identify any specific facts concerning those instances.

VII. Nuclear Safety and Quality Culture at WTP.

Approximately 95% of interviewees gave the safety and quality culture at WTP high marks, referring to it as strong, excellent, superior, and good, and noting that this culture for safety and quality was strictly enforced and adhered to. A number of employees, some citing long careers in the industry rated the culture at WTP to be the best or one of the best they have seen.

A number of interviewees stated that they believe that the emphasis on safety is actually a little overzealous and a bit too time consuming (meetings, etc.).

Four interviewees felt the safety culture is lip service and one stated that politics and the government preclude any significant changes in culture. Two interviewees characterized the safety culture as non-existent. A few interviewees noted that schedule and cost are pressures and emphasized that safety should always be the key focus.

VII. SUGGESTIONS FROM INTERVIEWEES.

Many interviewees stated that they had no suggestions and/or that the company is doing all that it can do with respect to the Safety Conscious Work Environment or Nuclear Safety and Quality Culture at WTP, and that there is nothing to improve.

One interviewee responded that there was room for improvement, but offered no specific suggestions.

Noting that what happened with respect to Dr. Tamosaitis is widely discussed and that rumors abound, a few interviewees suggested that they would like the company to address what happened with respect to Dr. Tamosaitis directly with them.

Other suggestions raised by interviewees, not directly tied to Dr. Tamosaitis, touched on four main areas: training, modifications to resolution process, coordination/communication and positive reinforcement.

A. Training.

A number of interviewees recommended more safety training, particularly for more junior employees. A few interviewees suggested more practical training including examples and/or hypotheticals of safety issues with potential consequences and examples of issues that have been raised with explanations of how the issue was resolved. One interviewee recommended having a class on raising issues and available avenues for reporting. Another interviewee recommended publishing more safety materials (like Mr. Russo's video) somewhere where individuals can access them [*We note that some interviewees suggested this might already be in place, if so, it might just be a matter of publicizing the availability of these materials*]. Another interviewee suggested handing out laminated cards listing all processes/avenues for raising issues.

B. Modifications To Resolution Process.

Some interviewees suggested that resolutions could be made more efficient by focusing on coordination of the issue resolution process, including, requiring someone in management to take ownership of each issue identified and requiring that manager to dig deep and fully understand the issue through consultation with the issue raiser. A few interviewees noted that sometimes, when the issue raiser is not involved in the resolution process, the exact issue of concern is misunderstood. A few interviewees recommended better tracking and better documentation of reported issues [*although we note that a number of interviewees complemented these features of the process*]. One interviewee suggested that the process be speeded up by limiting the paperwork required. Also, given the importance of these issues, one interviewee suggested more direct involvement from high management levels in the resolution process. A few interviewees suggested that the process be improved by ensuring that all resolutions reached on paper are actually effectuated. Also, a few interviewees recommended that enough time be allowed in the schedule for resolution of issues and that issues should be resolved prior to moving on—for example, one interviewee felt that the Project is not ready to shift from design at this point. One interviewee noted a need for written safety guidelines as to nuclear design, noting that designers need to know what to do with respect to how far piping, HVAC, fire escapes, etc. should be placed in relation to each component in nuclear plants so that this is clear to all designers and standard across the board.

C. Coordination/Communication.

A number of interviewees reported that they felt that it would be beneficial if, when an issue is raised and resolved, the issue and the resolution were published so that

individuals knew the concern has been dealt with appropriately. [*We note that some interviewees indicated that this information is already available, so it might just be a matter of publicizing its availability*]. Also, a few interviewees pointed out that better communication of issues between groups and departments would be helpful in getting issues resolved effectively and efficiently.

D. Positive Reinforcement.

A few interviewees expressed their belief that individuals should receive more positive reinforcement/recognition when concerns are expressed. In addition, one interviewee suggested that management reinforce its position that cost and schedule is not the driver and that safety and regulatory compliance is the top priority. Lastly, one interviewee suggested that the Project address morale issues

VIII. CONCLUSION

Overall, we view the results from this assessment as quite strong, and similar to prior assessments conduct by the Project.¹ The following data puts the Project in the upper range of nuclear facilities that we have assessed:

- Approximately 95% of workers interviewed reported that the Project's Safety Culture was strong
- Approximately 95 % of workers interviewed reported that they have no reluctance to raise safety or technical issues
- Approximately 95% of workers reported that both their immediate supervisor and the management chain encourage to identification and reporting of safety and technical concerns

The above referenced data is consistent with the conclusions drawn from employee interviews, which established that:

- Employees know and understand various avenues, and related policies and procedures, for raising safety and technical concerns
- Employees have strong confidence (based often on personal experience) that safety and technical concerns would be effectively resolved if raised
- A significant majority of Employees view their immediate supervisor as their preferred path for raising safety and technical concerns
- Training on raising safety and technical concerns is comprehensive and effective
- Employees do not fear retaliation for having raised safety or technical concerns

We note that, in some areas, individual employees provided negative responses relating to important work environment attributes. Given the relatively small

¹ Both the 2008 and 2009 VIT Plant Opinion Surveys confirmed a strong safety culture where employees were encourages to identify and raise safety and technical concerns and did not fear retaliation.

proportion of these comments, we view them typical of any healthy work environment, and not contradicting our overall conclusions about the strength of the Project's work environment. Nonetheless, we did consider those comments in formulating our specific recommendations provided below.

XI. Recommendations

As a threshold matter, we note that the Department of Energy Office of Health, Safety and Security (HSS) is separately conducting an evaluation of the processes in place to collect, track, evaluate and correct nuclear design and engineering safety concerns and issues for WTP, and to examine the condition of the work environment to determine whether it encourages the reporting of nuclear safety issues by workers, engineers, supervisors, managers and other employees. It is recognized that differences in the focus, structure and implementation of the HSS review may result in information, conclusions and recommendations that differ somewhat from those contained in this draft report. Therefore, we recommend that the information gathered and evaluated by HSS be considered by BNI, in conjunction with the results of this WTP assessment, in arriving at a final set of conclusions and recommendations to be used in the final action plan to be developed.

Our recommendations resulting from this assessment are as follows:

1. There may be a significant potential improvement opportunity related to the Employee Concerns Program(ECP). Interview results are generally positive for the ECP, with the majority of employees reporting that the program is effective, visible, confidential and safe. However, interview results for the nine employees who had used the program in the past are mixed. Four of the nine employees believe the program to be effective, describing the program as responsive, communicating back well and confidential. Five of the nine employees had a more negative view, describing the program as an ineffective avenue to address concerns due to insufficient technical competence, lack of timely resolution and feedback and the reputational tarnish of those investigated by ECP even if the concern is not substantiated. We recognize that an interview population of nine employees who have used the ECP in the past is insufficient to draw any meaningful conclusions about the program. As a result, we recommend that the Project conduct a more detailed assessment of theECP to evaluate the issues of technical competence, timeliness of concern resolution, adequacy of feedback, and confidentiality through (1) structured interviews of program users, and (2) an evaluation of program implementation against industry best practices.

2. The Project is currently developing a WTP Nuclear Safety and Quality Culture Plan to enhance the focus on safety culture improvement. This will provide an opportunity to address some of the issues raised by interviewees with regard to potential areas of weakness. In finalizing the Plan, the Project should address the issues identified in this assessment and in the HSS evaluation. Implementation of this NSQC Plan should include:

- a. A comprehensive communication plan to reinforcement to the workforce the Project's continuing commitment to safety culture and safety conscious work environment principles. The plan should assure that Project management has communicated its expectation to first line supervisors and managers that they should be encouraging and assisting employees in raising issues and concerns. The communication plan should assure that employees are aware of the the results of this assessment, the results of the HSS evaluation, and the Project's plan to address those results.
 - b. Re-evaluation and updating of e safety culture training for employees and managers. Particular targets for this training include newer/younger employees who may be less experienced in nuclear safety culture expectations, and mid-level managers who may be less attuned to the need for active encouragement of employees to raise issues and to assure that issues are elevated if the individual is not satisfied with the initial response. Various modes of providing training should be evaluated, including, desktop training, practical discussion groups and other forms of live training
3. The Project should evaluate EDR, PIER and other avenues and processes used for raising safety and technical concerns for opportunities to streamline, integrate, cross-reference and otherwise improved efficiency and alignment. As part of this evaluation, the Project should address how it can provide greater visibility to employees of the capture, tracking and resolution of technical issues. This evaluation should also address the processes used to assure that adequate feedback is provided to employees who raise issues and concerns.

ADDENDUM

In October, 2010, the Department of Energy, Office of Health Safety and Security (“HSS”) issued its report entitled, “Independent Review of Nuclear Safety Culture at the Hanford Site Waste Treatment and Immobilization Plant Project.” The HSS report findings are consistent with those contained in the Pillsbury Assessment Report. Specifically, as contained in the Executive Summary, HSS found the following:

- Although improvements are needed in some areas, BNI and its subcontractors have established the framework for a strong nuclear safety culture at WTP. Most WTP personnel who were interviewed expressed that their managers encouraged a questioning attitude and that they were comfortable with raising safety concerns. However, some individuals within WTP believe that there is a chilled environment that discourages reporting of safety concerns, and/or are concerned about retaliation for reporting safety concerns. In a strong nuclear safety culture, any such employee concerns need to be carefully evaluated and addressed. Aspects of the BNI management systems that contributed to this situation and warrant increased and timely management attention include: (1) ensuring that management communications and actions clearly demonstrate management commitment to nuclear safety and quality and (2) ensuring that change is effectively managed as the project progresses through major stages.

This HSS finding is consistent with the Pillsbury Assessment findings contained in Section VI: Identification and Raising of Technical, Safety or Compliance Concerns

- BNI ha[s] multiple processes for managing nuclear safety issues. For most technical issues, these processes have been effectively implemented to address many safety issues in a transparent and well documented manner that was successful in achieving agreement on the actions needed for resolution and monitoring those actions to completion. In addition, WTP personnel have been trained on multiple options for raising nuclear safety concerns through the issues management systems and alternative mechanisms, such as the employee concerns programs and differing professional opinion program, that can be used if personnel are not satisfied that their issues are being adequately addressed through the issues management systems.

This HSS finding is consistent with the Pillsbury Assessment findings contained in Section II: Avenues Available for making Technical Comments, Identifying Technical Issues or Raising Safety Concerns; Section III: Effectiveness of Avenues for Raising Issues / Concerns and Experience Using Them; and Section IV: Training

- With regard to closure of technical issues, BNI has defined and, in most cases, implemented acceptable multi-level processes for ensuring the issues are evaluated and closure decisions are made by the appropriate level of BNI and [Office of River Protection] management.

This HSS finding is consistent with the Pillsbury Assessment findings contained in Section II: Avenues Available for making Technical Comments, Identifying Technical Issues or Raising Safety Concerns and Section VI: Identification and Raising of Technical, Safety or Compliance Concerns

- BNI [has] ongoing and planned efforts to improve the nuclear safety culture. Before this HSS review, BNI management recognized a need to further strengthen the nuclear safety culture at WTP and began to develop a formal plan for improving the safety culture. During this HSS review, BNI senior management identified some potential actions for refining and expanding the effort. Although at a preliminary stage of development, the potential actions generally correspond to the areas of weakness identified by the HSS review.

This HSS finding is consistent with the Pillsbury Assessment findings contained in Section VII: Nuclear Safety and Quality Culture at WTP

Similarly, the recommendations contained in the HSS report applicable to BNI are consistent with those recommendations contained in the Pillsbury Assessment Report. The specific HSS recommendations applicable to BNI relate to BNI's Nuclear Safety and Quality Culture (NSQC) initiative. These HSS recommendations are:

- Perform a systematic assessment of the existing processes for identifying and resolving nuclear safety issues, with particular emphasis on root cause analysis of problems involving the initial identification of issues.

This recommendation is consistent with recommendation 3 in the Pillsbury Assessment report.

- Establish a formal change management process that identifies the actions needed to ensure that safety programs are not degraded by changes in project status or priorities.

This recommendation is consistent with recommendations 2a and 2b in the Pillsbury Assessment Report.

- Identify mechanisms to strengthen trust among the workforce and better communicate information to employees.

This recommendation is generally consistent with recommendations 2a and 2b in the Pillsbury Assessment Report and should be incorporated into those recommendations.

- Include actions and elements in the development and implementation of the NSQC Plan to ensure that it results in sustainable and continuous improvement in the nuclear safety and quality culture at the WTP.

This recommendation is generally consistent with recommendations 2a and 2b in the Pillsbury Assessment Report and should be incorporated into those recommendations..

- Examine all credible concerns to ensure that the nuclear safety culture does not degrade over time and to better determine the extent of the concerns.

This recommendation is generally consistent with recommendations 2a and 2b in the Pillsbury Assessment Report and should be incorporated into those recommendations.