

**INDEPENDENT REVIEW RESPONDING TO THE
JANUARY 28, 2004 NRC LETTER
REGARDING THE
SAFETY CONSCIOUS WORK ENVIRONMENT
AT THE
SALEM AND HOPE CREEK GENERATING STATIONS**

May 4, 2004

**James O'Hanlon, Team Leader
Jacque Durr
Wayne Kropp
Barry Letts
Peter Przekop
Neil Bergh**

I. EXECUTIVE SUMMARY

On January 28, 2004, the NRC informed PSEG of its interim findings arising out of the NRC's special review at the Salem and Hope Creek Generating Stations to assess the stations' environment for raising and addressing safety issues. As a result of its preliminary findings, the NRC requested PSEG to "conduct [its] own in-depth assessment" of the stations' work environment. On February 13, 2004, E. James Ferland, Chairman and Chief Executive Officer, PSEG, chartered an independent assessment of the stations' work environment for raising and addressing safety concerns.

The Independent Assessment Team conducted an in-depth examination of the work environment for raising and addressing safety concerns at the Salem and Hope Creek Generating Stations. James O'Hanlon, former President and Chief Operating Officer of Dominion Energy, was the Team leader and provided overall direction to the Team's activities. The Assessment Team first identified the criteria and elements of a safety conscious work environment (SCWE) and then reviewed PSEG activities most relevant to those criteria and elements. The Team developed criteria and elements from a number of sources, specifically, SCWE-related NRC materials, good industry practices, and the Team's collective nuclear industry experience. Collectively, these materials point to four basic criteria in assessing a SCWE. The Team then derived nine elements from NRC's 1996 Policy Statement on the Freedom of Employees in the Nuclear Industry to Raise Safety Concerns Without Fear of Retaliation to further consider the work environment. Finally, and consistent with the NRC's January 28th letter, and PSEG's charter, the Team also considered: operational decision-making, unresolved conflicts, the NRC inspection record, and the corporate / site interface.

The Team conducted its field work at the Salem and Hope Creek site and PSEG headquarters from February 18, 2004 through April 16, 2004. During this time, the Team collected information through structured interviews of personnel and the review of relevant documentation and performance indicators. The Team conducted approximately 190 structured interviews of current and former Salem and Hope Creek site personnel and personnel working at PSEG Headquarters. Personnel were asked questions based on the Team's industry experience, NRC SCWE expectations, and site-specific events that could represent unresolved conflicts. Personnel were selected from the Salem and Hope Creek organizations or departments that, based on the results of the Synergy Survey, USA Assessment, or interviews, were identified as exhibiting characteristics of a challenged work environment. The Team also interviewed former employees, if necessary, to understand an event or issue under review, and randomly interviewed an additional limited number of employees to provide the Team further assurance that it had identified and understood the nature and scope of SCWE issues at Salem / Hope Creek. For its part, PSEG informed all site personnel that they could voluntarily come to the Team and be interviewed. The Team interviewed all eleven persons who volunteered for interviews. Finally, the Team also interviewed senior PSEG executives, senior site management, and other management personnel, including all nuclear officers, the PSEG Power President, the PSEG Chief Financial Officer, the PSEG Chairman of the Board and Chief Executive Officer, and several other corporate officials who provide support services to PSEG Nuclear.

The Team first reviewed PSEG's previous efforts to assess and enhance the work environment. The Team concludes that, prior to 2003, PSEG Nuclear's efforts to assess and enhance the work environment were limited. The Team further concludes that, beginning in 2003, with the initiation of the Synergy Survey and USA Assessment, management has taken

sufficient steps to assess the work environment. Although it appears to the Team that PSEG has taken appropriate initial and immediate actions in response to these two recent initiatives as reflected in PSEG's February 27, 2004 letter to the NRC, it is too soon for the Team to further characterize or assess the sufficiency of PSEG's response. In this regard, PSEG plans to consider the findings and recommendations of these initiatives, together with this report, in formulating a comprehensive set of actions to enhance the work environment.

In requesting that PSEG conduct an in-depth review, NRC referred PSEG to NRC's inspection record and certain unspecified unresolved conflicts involving operational decision-making. PSEG also asked the Team to consider any impact on the work environment from the corporate / site interface. In organizing its findings, the Team first reviewed the SCWE implications of: (1) NRC's inspection record (Section V.A); (2) events involving operational decision-making and unresolved conflicts (Section V.B), including their SCWE and broader management implications (Section V.C); and (3) the corporate / site interface (Section V.D). The Team then made findings relative to the four SCWE criteria: (1) employee willingness to raise concerns (Section V.E); (2) effectiveness of the normal processes for resolving concerns (Section V.F); (3) effectiveness of the Employee Concerns Program (ECP) (Section V.G); and (4) management effectiveness in detecting and preventing retaliation and chilling effect (Section V.H).

The Team's conclusions as to the four criteria in assessing SCWE are:

1. Do personnel feel free to raise nuclear safety concerns without fear of retaliation for doing so?

Conclusion

Personnel will raise nuclear safety concerns. Some individuals did express some hesitancy in raising issues for fear of retaliation, while others expressed similar hesitancy because of issues having been raised yet not resolved, the lingering effects from the unresolved issues cited in this report, or an ineffective corrective action program.

2. Is the site problem identification and resolution process effective (primarily the corrective action program) when addressing employee concerns?

Conclusion

While management has been receptive to issues perceived to be significant or involving a nuclear safety issue, management has been less receptive and ineffective in addressing other employee concerns, particularly longstanding equipment problems, principally due to ineffective implementation of the corrective action program and work management practices.

3. Are there alternate mechanisms, such as an Employee Concerns Program, available for personnel to raise nuclear safety concerns and are they effective?

Conclusion

Although the Employee Concerns Program has the requisite elements of an acceptable program, it could be enhanced. As implemented, the ECP has been ineffective in that a significant fraction of site personnel (15-20 percent) do not view it as a viable alternative to raise

concerns, and the program did not identify to management with sufficient clarity the SCWE issues reflected in the findings of this report, the Synergy Survey, and USA Assessment.

4. Is management effective at detecting and preventing retaliation and addressing any chilling effect in response to employee concerns?

Conclusion

The Team did not review the merits of individual claims of retaliation currently pending at the company; however, based upon the numerous interviews the Team did conduct, and the relatively small number of such claims, the Team could not identify a systemic issue involving management's ability to detect and prevent retaliation. In contrast, as best illustrated in Section V. B., "Unresolved Conflicts," management has not been effective at understanding or addressing the potential for a chilling effect in response to how management has addressed highly visible employee concerns and actions associated with operational events.

The Team's conclusions and recommendations as to the nine elements of a healthy SCWE, derived from NRC's Policy Statement, are:

1. Documentation and communication of management's SCWE expectations

Conclusion

PSEG recently issued an appropriate SCWE Policy, but now needs to effectively communicate that policy and assure it is reflected in implementing procedures, training, and promotional material.

Recommendation

Assure management expectations and standards regarding SCWE and professionalism are established and communicated.

- Assure the recently issued SCWE policy is reflected in all implementing procedures, as well as SCWE training and promotional material.
- Document expectations regarding procedural compliance, conservative decision-making, and roles and responsibilities for operational decisions.
- Emphasize management's responsibility to promote and act in conformance with these standards and expectations.

2. Training on, and reinforcement of management's SCWE expectations

Conclusion

SCWE and supervisory skills training has been insufficient and needs to be upgraded.

Recommendation

Train all personnel on the recently-issued SCWE policy, upgrade existing supervisory skills training, and thereafter, promote and reinforce SCWE on an ongoing basis. This training should include:

- Revising site access training to incorporate the revised SCWE policy.
- Training all personnel on SCWE, including contractors, concerning how to raise an issue and what to expect from management in responding. Consider using the

unresolved issues discussed in this report as case studies, to train workers on management's SCWE expectations; also consider involving the participants in the unresolved conflicts in developing, reviewing, and / or teaching these case studies.

- Training for all supervisors and above on SCWE. This effort should begin with an initial needs-based analysis of the components of SCWE and supervisory skills training, including how to respond to a concern, as well as identification of retaliation and chilling effect. In reviewing the basic supervisory skills training, consider emphasizing the relationship between supervisory skills and SCWE in such Leadership Academy courses as: "People Skills," "Communication Skills," "Conflict Management," and "Power of Recognition." Similar messages and expectations should be incorporated into the Leadership Academy courses which are focused on performance management skills and best practices, such as "Performance Issues," "Behavioral Event Interviewing," and "Positive Discipline."
- Ensure all supervision receive basic supervisory skills training. In this regard, establish a time period (*e.g.*, 90 days) for all current supervisors to receive such training, and a time period (*e.g.*, 30 days) for all new supervisors to receive comparable training.
- Implement and maintain a communications strategy that includes SCWE elements, such as:
 - Communicate SCWE action plan elements to the site (including the findings, conclusions, and recommendations of this report and PSEG's responses to NRC's January 28th letter) and thereafter maintain them on the SCWE web page.
 - Consider SCWE stand-downs to address and resolve unresolved conflicts and legacy issues, and to reset expectations.
 - Increase management visibility and two-way interaction with all levels of management and workers, *e.g.*, town hall meetings with senior management, management by walking around (MBWA), observing work in the field, tailgate sessions, etc.
 - Make greater use of PSEG's "Good Catch" program.
 - Add SCWE elements to "4Cs" meetings.
 - Develop additional and varied promotional materials and publicize them using various methods around the site, *e.g.*, intranet, posters, electronic billboards, news articles.
 - Develop and implement an external communications plan, including to the NRC and interested stakeholders.
 - Make effective use of the change management process.

3. Elements and implementation of the Corrective Action Program

Conclusion

Implementation of the Corrective Action Program and work management processes have been ineffective as set forth in this report and the USA Assessment.

Recommendation

Correct identified deficiencies in the implementation of the Corrective Action Program and work management processes as set forth in this report and the USA Assessment. In this regard:

- Leadership needs to re-establish the roles and responsibilities of those involved in these programs and re-emphasize adherence to these processes.
- Re-establish management's expectations as to the appropriate threshold for raising issues in light of the practice that has developed relative to longstanding issues.
- Develop and effectively implement a plan to aggressively address longstanding equipment problems. Involve Operations in the process, ensure sufficient resources are applied, and communicate status to the site.

4. Elements and implementation of the Employee Concerns Program

Conclusion

Although the Employee Concerns Program has the requisite elements of an acceptable program, it could be enhanced, and, as implemented, it has been ineffective in the two respects previously noted.

Recommendation

Upgrade ECP consistent with the findings in this report, including elements, such as:

- Define core ECP responsibilities and then assure resources are adequate.
- Establish and follow a rigorous administrative process for core ECP functions, including case management, investigations, and documentation.
- Augment and enhance ECP promotional materials and activities.

5. The quality and use made of SCWE self assessments

Conclusion

Recent work environment assessments performed by Synergy and USA are appropriate diagnostic assessments, the results of which are currently under review by management. Comparable assessments should be conducted on a periodic basis.

Recommendation

Continue PSEG SCWE self assessment activities, including:

- Periodically perform a survey similar to the recent Synergy Survey so as to monitor progress and trends.

- Upgrade the PSEG SCWE quarterly survey to include elements, such as:
 - Identification of department affiliation of those surveyed to define the existence of pockets in need of management attention.
 - Provide more meaningful analysis of survey results to include comparison of industry data.
 - Provide clearer and more meaningful recommendations upon which management can act.
 - Establish SCWE Performance Indicators and thereafter monitor such indicators consistent with how management monitors and responds to other indicators of plant performance.
6. SCWE implications from management's administration of Labor Relations and Human Resources policies, procedures, and practices

Conclusion

The Human Resources (HR) support and Labor Relations practices need to be better aligned with SCWE principles.

Recommendation

Align HR and Labor Relations Practices with management's SCWE expectations, including:

- Establishing an Executive Review Board to review PSEG and contractor proposed adverse actions from a SCWE perspective.
 - Establishing a "People" Response Team to identify emerging personnel issues and assure an effective response.
 - Define, and train on, the interplay among SCWE, the collective bargaining agreement, performance evaluations, and disciplinary programs.
 - Consider inclusion of SCWE attributes in supervisory performance evaluations and other means to hold managers accountable for performance in SCWE areas through the established performance evaluation and/or discipline system.
7. NRC allegations, including PSEG's responses to NRC referred allegations

Conclusion

The number of NRC allegations in 2003 appear to be within the industry norm for a three-unit site. Although the number has risen during the first quarter of 2004, this is not atypical given the current level of scrutiny at Salem and Hope Creek. PSEG has appropriately responded to those allegations the NRC has referred back to PSEG.

Recommendation

Continue to trend NRC allegations and assure allegations referred back to PSEG are promptly and thoroughly reviewed.

8. Management's responses to claims of retaliation

Conclusion

A uniform system is not in place to assure all claims of retaliation are promptly and uniformly reviewed, and management has not sufficiently understood or considered the chilling effect in response to such claims.

Recommendation

Establish a process to assure prompt and uniform investigation of retaliation claims regardless of where they are raised in the organization. This fact-finding function should not remove ultimate responsibility from line management in responding to claims of retaliation.

9. Management of and interface with contractor personnel

Conclusion

Management of and interface with contractor personnel does not present a programmatic challenge to the SCWE at the Salem and Hope Creek site; however, one contractor indicated a hesitancy to raise an issue because he was a contractor.

Recommendation

Assure providers of contract personnel establish a comparable SCWE program, including a SCWE policy, training, and a requirement that PSEG is notified of any retaliation claim and provided the results of any review.

In addition to the four criteria and nine elements, the Team focused on SCWE implications from certain unresolved events involving operations, the NRC inspection record, and corporate / site interface. The Team's conclusions and recommendations as to these areas are:

1. Unresolved Events

Conclusion

While none of the unresolved events that are described in this report involved reactor operations that put either the plant or public at risk, these events demonstrate that some in management, as well as some among the workforce:

- Place a greater emphasis on production and schedule considerations than conservative decision-making.
- Tolerate degraded equipment conditions and expect personnel to work around operational challenges presented by such conditions.
- Tolerate procedural non-adherence.

These events also demonstrate that some in management:

- Do not clearly communicate standards or the rationale behind their actions, or provide feedback to those raising issues.
- Have taken actions, or failed to take actions, that have had a chilling effect on the willingness of certain employees to raise concerns.

- Become involved in decisions more appropriately the responsibility of Operations.

Management is addressing and making progress in overcoming many of these perceptions, but has not yet regained the trust and confidence of Operations. For example, management is in the process of ensuring that the responsibility and decision-making authority remains within Operations, but needs to further clarify expectations in light of these earlier misperceptions, and then act over an extended period of time consistent with those expectations. This effort is made more difficult by some in the workforce who have not accepted the need to strictly adhere to procedures. In some cases, mixed messages from management's actions with respect to procedural adherence compound the difficulty.

Recommendation

Although former management is largely responsible for allowing the conditions to exist that caused these unresolved conflicts to occur and linger, the current Salem / Hope Creek management team must visibly embrace the above recommendations (particularly recommendations 1, 2, 3, and 6) and lead implementation over time to regain the trust and confidence of the workforce.

2. NRC Inspection Record

Conclusion

The record reflects the site's failure to:

- Consistently translate engineering information into work documents.
- Consistently take prompt and effective correction action.
- Adequately identify or properly classify procedural violations.

Recommendation

- Review the corrective action program data base to determine if there are similar findings identified regarding the process for translating engineering requirements into working documents. From this review, determine the scope of the problem, and if additional corrective actions are warranted.
- Determine if the findings in Section V.A. of this report represent a systematic problem, and determine if additional corrective actions are appropriate.
- Perform a review of the Root Cause Analysis and the corrective action statement for the "A" Emergency Diesel to determine that the correct level of analysis is specified for copper content.
- Reconsider the evaluation findings of Notification 20140525 to ensure consistency of the facts with the findings. Verify that the messages sent in the corrective actions are consistent with management's standards and expectations for procedural adherence.

3. Corporate / Site Interface

Conclusion

- As to working-level personnel and mid-level management, the interface has not caused a past or current SCWE issue in that the vast majority of individuals within this group have not linked the interface with the raising or addressing of concerns. Some working-level personnel and mid-level site managers, however, have assumed a negative impact from the interface in that they infer: (1) site management is not fixing longstanding equipment issues because corporate is not providing the necessary funds, and (2) site management's conduct in the course of the unresolved conflict events resulted from perceived pressure from corporate to place production and scheduling issues over conservative decision-making.
- As to senior site and corporate management, again this group has not linked the interface with the raising or addressing of concerns. Nonetheless, several within this group are frustrated because they believe corporate guidance has not been clearly communicated, and the roles and responsibilities among nuclear officers and their corporate counterparts, particularly in the areas of HR, Labor Relations, Budget, and Financial Planning, have not been clearly defined. Further, some employees have perceived the business planning process and incentive compensation process as communicating a greater emphasis on production and schedule than on conservative decision-making.

Recommendation

PSEG needs to more effectively communicate between corporate and nuclear. It also needs to clearly define the interplay between PSEG Nuclear, PSEG Power, and PSEG relative to such support functions as financial planning, HR support, and Labor Relations, and thereafter, document the respective roles and responsibilities in appropriate guidance documents, such as the PSEG Power Play Book. Specifically, corporate should:

- Improve the direct communications link from corporate to the site.
- Improve the communication of corporate issues to the site, including business planning, incentive compensation, corporate structure, and reorganizations.
- Provide better senior level and middle management level direct interfaces between corporate and the site.
- Establish and maintain a nuclear succession plan to assure stability.
- Review goals and revise as necessary to assure proper relationships among safety and production parameters.
- Revise Power Behaviors to include a safety value and list it first.
- Review incentive compensation to assure alignment with recommendations 4-6 above.
- Site management must embrace and consistently communicate corporate goals and behaviors.

II. INTRODUCTION

On January 28, 2004, the NRC informed PSEG of its interim findings arising out of the NRC's special review at Salem / Hope Creek to assess the stations' environment for raising and addressing safety issues (Enclosure 1). The NRC noted that it had obtained information on a number of events that had occurred over the "past few years" that "called into question the openness of management to concerns and alternative views, strength of communications, and effectiveness of the stations' corrective action and feedback processes." The NRC's preliminary view of its assessment was that the potential exists that the Salem / Hope Creek work environment could, if not addressed, lead to an "unacceptable, chilled environment for raising issues and making appropriate operational decisions."

As a result of its preliminary findings, the NRC requested PSEG to "conduct [its] own in-depth assessment" of the stations' work environment. In this regard, the NRC indicated that prior surveys conducted by, or on behalf of, PSEG could be considered as part of this assessment.

A. PSEG's Independent Safety Conscious Work Environment Assessment

On February 13, 2004, E. James Ferland, Chairman and Chief Executive Officer, PSEG, chartered an independent assessment of the work environment for raising and addressing safety concerns at the Salem and Hope Creek Generating Stations (the Independent Assessment). The Charter under which the Independent Assessment Team (the Team) conducted this assessment is enclosed (Enclosure 2). The Independent Assessment responds to the NRC's direction to PSEG to conduct an in-depth assessment of the Salem and Hope Creek Generating Stations' work environment. As contemplated in the NRC's letter, the Independent Assessment reviewed prior work environment surveys or assessments conducted by, or on behalf of, PSEG and considered these reviews in formulating the scope and approach to the Independent Assessment.

B. Prior Work Environment Assessments

Prior to receiving the NRC's January 28th letter, PSEG Nuclear had recently commissioned two work environment reviews. PSEG Nuclear retained Synergy Consulting Services Corporation (Synergy) to conduct a survey-based "Comprehensive Cultural Assessment" (the Synergy Survey) of the Salem and Hope Creek sites. That survey took place in December 2003 with Synergy providing PSEG Nuclear its results in January 2004. PSEG Nuclear also requested in December 2003, that the Utility Services Alliance (USA) conduct a targeted assessment (the USA Assessment) of the sites' nuclear safety culture. PSEG Nuclear undertook the assessment in response to the recommendations contained in the Institute of Nuclear Power Operations (INPO) Significant Operating Experience Report (SOER) 02-04. The USA Assessment took place on site between March 1 and 5, 2004, and the USA provided PSEG Nuclear a final report in April, 2004.

Taken together, the Synergy and USA assessments provide relevant data on the current state of the Salem and Hope Creek work environments. The assessments were broad in scope and complementary, and their overall results are, in large part, consistent with one another. As contemplated in the NRC's January 28, 2004 letter, the current Assessment Team considered safety conscious work environment (SCWE) relevant elements of the Synergy and USA assessments, as well as PSEG Nuclear self assessments conducted before 2003.

III. THE INDEPENDENT ASSESSMENT

A. Purpose and Scope of the Independent Assessment

The Team conducted an in-depth examination of the work environment for raising and addressing safety concerns at the Salem and Hope Creek Generating Stations. The purpose and scope of the Independent Assessment were provided to the NRC in PSEG's February 27, 2004 letter to the NRC Region I Regional Administrator (Enclosure 3). In that letter, PSEG stated that the Assessment would:

- Assess the current work environment at Salem and Hope Creek, including the effect on the work environment of operational decision making and problem identification and resolution (including the corrective action program);
- Review the sufficiency of management's initiatives and efforts to assess and enhance the work environment;
- Review the impact of the corporate-site interface on the work environment at the site; and
- Make recommendations as appropriate to senior management.

In conducting this Assessment, the Assessment Team has:

- Analyzed events involving operational decision making and unresolved conflict;
- Selected interview populations based upon any such events that may have negatively affected the work environment, as well as any pockets of concern identified in the Synergy Survey or the USA Assessment;
- Reviewed Employee Concerns Program (ECP) performance indicators (PIs) and survey results;
- Reviewed the NRC inspection record, including cross-cutting issues, and conducted sampling to ensure adequate and timely closure of inspection findings and indicated program enhancements; and
- Reviewed the corporate / site interface to determine if there are any issues relevant to SCWE.

The Assessment Team's conclusions and recommendations have been developed in consideration of the following:

- Policies and procedures implementing PSEG's expectations to maintain a SCWE;
- Training on those policies and procedures, including general site training, periodic refresher training, and supervisory skills training;
- The effectiveness of the corrective action program as measured by industry standard performance indicators;
- The effectiveness of the ECP;
- The interface among Human Resources (HR), Labor Relations, and management with regard to addressing workplace issues;

- The interface between PSEG corporate and site management with regard to issues relevant to SCWE;
- The number, nature, and trend in NRC allegations, including NRC referred allegations and PSEG's response to these referred allegations; and
- Claims of retaliation over the past several years, including management actions to address any chilling effect in response to such claims.

B. The Independent Assessment Team

PSEG assembled a team of former senior industry managers and regulators to conduct the Independent Assessment. The Team was comprised of the following individuals:

- James O'Hanlon was the Team leader and provided overall direction to the Team's activities. Mr. O'Hanlon also was the lead in the Team's assessment of the interface between the Salem and Hope Creek Site Management and PSEG Corporate Management. Mr. O'Hanlon was most recently President and Chief Operating Officer of Dominion Energy. Prior to that position, Mr. O'Hanlon was the Chief Nuclear Officer of Dominion with responsibility over the Surry and North Anna Nuclear Stations.
- Jacque Durr conducted fact-finding interviews and was the lead Team member in assessing work place issues reflected in the NRC inspection record of the Salem and Hope Creek site. Mr. Durr also led the inquiry into the effects of unresolved conflicts at the site. Mr. Durr is a nuclear industry consultant specializing in quality assurance program reviews, allegation resolution, and nuclear event analysis, and has conducted independent reviews of various aspects of site operations at numerous nuclear sites. Mr. Durr worked for the NRC for over twenty-four years, most recently as NRC Region I manager for reactor projects responsible for the restart of the Millstone reactors from the extended outage.
- Wayne Kropp conducted fact-finding interviews and was the Team lead for assessing the Salem / Hope Creek processes for problem identification and resolution. Mr. Kropp was a NRC Region III manager from 1983 through 1997. Since leaving the NRC in 1997, Mr. Kropp has been a consultant at a number of nuclear sites, primarily in the area of oversight and assessment. Most recently Mr. Kropp produced a review of the Salem / Hope Creek corrective action program and has been working with site management on program improvements.
- Neil Bergh was the Team lead in assessing PSEG Nuclear programs, including the Salem / Hope Creek ECP. Mr. Bergh also coordinated the USA Assessment. Mr. Bergh holds the position of Manager, PSEG Nuclear Quality Assurance. Prior to joining PSEG, Mr. Bergh held numerous positions at the Millstone Nuclear Power Station and has over twenty-five years of commercial nuclear power experience. Mr. Bergh was Manager, Nuclear Oversight during the Millstone recovery.
- Peter Przekop conducted fact-finding interviews in support of the various elements of the Assessment, and provided overall administrative support to the Team. Mr. Przekop has over thirty years of operational experience in commercial nuclear power. Mr. Przekop was Manager of the Employee Concerns Oversight Panel during the

Millstone Nuclear Power Station recovery. In that role, Mr. Przekop provided oversight and assessment of the ECP and SCWE.

- Barry Letts conducted fact-findings interviews in support of the various elements of the Assessment. Mr. Letts was formerly NRC Field Office Director, Office of Investigations, Region I from 1992 through 2002. Since leaving the NRC, Mr. Letts has conducted independent investigations into allegations of discrimination and intentional wrongdoing issues, as well as SCWE assessments at a number of nuclear sites.

In addition, PSEG has retained three additional senior nuclear industry and government executives to review the Team's assessment and recommendations. These individuals are:

- Joseph Callan, former NRC Executive Director for Operations
- Michael Tuckman, former Chief Nuclear Officer, Duke Power.
- William Cottle, former Chief Executive, South Texas Nuclear Operating Company.

C. SCWE Standard of Review

The Assessment Team identified the criteria and elements of a SCWE and then reviewed PSEG activities most relevant to those criteria and elements. The Team developed criteria and elements from a number of sources, specifically, SCWE-related NRC materials, good industry practices, and the Team's collective nuclear industry experience.

The primary expressions of NRC expectations regarding a SCWE are contained in: (1) NRC's Policy on the Freedom of Employees in the Nuclear Industry to Raise Safety Concerns Without Fear of Retaliation, dated May 14, 1996; (2) the NRC document entitled "Best Practices to Establish and Maintain a Safety Conscious Work Environment"; and (3) NRC's Notice and Request For Public Comment on the Need for its Licensees to Establish and Maintain a Safety-Conscious Work Environment, dated February 26, 1997.

The Team considered additional guidance regarding SCWE that is contained in the Nuclear Energy Institute (NEI) publication, Employee Concerns Program Process Tools in a Safety Conscious Work Environment, dated December 1997. This document provides a collection of practices and techniques designed to assist nuclear facilities in establishing and maintaining a SCWE, and, in particular, ensuring the existence of effective alternate mechanisms for resolving employee concerns. The NEI's guidance is based upon the best practices and lessons learned throughout the nuclear industry.

The Team also reviewed various INPO and International Nuclear Safety Advisory Group (INSAG) guidance documents that address the broader but related issue of safety culture. To remain responsive to NRC's January 28th letter, the Team focused on criteria and elements relevant to a healthy SCWE.

Collectively, these materials point to four basic criteria in assessing a SCWE:

1. Do personnel feel free to raise nuclear safety concerns without fear of retaliation for doing so?
2. Is the site problem identification and resolution process (primarily the corrective action program) effective when addressing employee concerns?

3. Are there alternate mechanisms, such as an ECP, available for personnel to raise nuclear safety concerns and are they effective?
4. Is management effective at detecting and preventing retaliation and addressing any chilling effect in response to employee concerns?

As to the four criteria, the Team specifically considered nine elements principally derived from NRC's 1996 Policy Statement:

1. Documentation and communication of management's SCWE expectations.
2. Training on, and reinforcement of management's SCWE expectations.
3. Elements and implementation of the Corrective Action Program (CAP).
4. Elements and implementation of the ECP.
5. The quality and use made of SCWE self assessments.
6. SCWE implications from management's administration of Labor Relations and Human Resources policies, procedures, and practices.
7. NRC allegations, including PSEG's responses to NRC referred allegations.
8. Management's responses to claims of retaliation.
9. Management of and interface with contractor personnel.

A table showing the relationship between the four basic SCWE criteria, the SCWE attributes of the NRC Policy Statement, and the nine elements addressed by the Team is included as Enclosure 4.

Consistent with the NRC's January 28th letter, and PSEG's charter, as to the four criteria and nine elements, the Team also considered: operational decision-making, unresolved conflicts, NRC Inspection Record, and the corporate / site interface.

D. Methodology

The Team conducted its field work at the Salem and Hope Creek site from February 18, 2004 through April 16, 2004. During this time, the Team collected information through structured interviews of personnel and review of relevant documentation and performance indicators.

1. Interviews

The Team conducted approximately 190 structured interviews of current and former Salem and Hope Creek site personnel and personnel working at PSEG Headquarters. A breakdown of the interviews by category of personnel is provided as Enclosure 5.

Personnel were asked questions based on the Team's industry experience, NRC SCWE expectations, and site-specific events that could represent unresolved conflicts. The questions were designed to elicit not only the opinions and perceptions of PSEG workers relative to SCWE generally, but also to obtain specific factual information relative to any event or issue having significance for a SCWE and involving operational decision-making, unresolved conflict or a corporate-site interface. Personnel were asked a standard set of questions; however, the Team tailored certain questions to reflect the subject individual's department, scope of work, and/or job

responsibilities. (The structured interview questions used by the Team are provided as Enclosure 6.)

Personnel were selected from the Salem and Hope Creek organizations or departments that, based on the results of the Synergy Survey, USA Assessment or interviews, were identified as exhibiting characteristics of a challenged work environment. The organizations from which these persons were selected were Salem and Hope Creek Chemistry, Shift Operations, Online / Cycle Maintenance, Radiation Protection, Maintenance, and the Yard/Nuclear worker organization. The Team also interviewed personnel from Quality Assurance, Engineering, and Security. The Team interviewed former employees, when necessary to understand an event or issue under review, and randomly selected an additional limited number for interviews to provide the Team further assurance that it had identified and understood the nature and scope of SCWE issues at Salem / Hope Creek.

For its part, PSEG informed all site personnel that they could voluntarily come to the Team and be interviewed. Eleven persons volunteered and were interviewed. Finally, the Team also interviewed senior PSEG executives, senior site management, and other management personnel, including all nuclear officers, the PSEG Power President, the PSEG Chief Financial Officer, the PSEG Chairman of the Board and Chief Executive Officer, and several other corporate officials who provide support services to PSEG Nuclear.

The Team informed the persons interviewed that the Independent Assessment is confidential in nature and their identities would be provided to others only on a need-to-know basis. However, because persons interviewed were not considered confidential sources under PSEG procedures, the Team could not, and did not provide them assurances of confidentiality regarding the information they provided except that such information would be shared with others only on a need-to-know basis.

Each interview was documented in a manner consistent with the Assessment Documentation Protocol (Enclosure 7). In particular, interviewers took interview notes that reflected the questions asked, answers provided, and any additional information relevant to the Team's work. Interviewers prepared typed final interview reports of each interview, which are maintained as part of the Independent Assessment's records in accordance with this Protocol.

2. Review of Documents and Performance Indicators

In the course of its review, the Team considered documents and other materials, including performance indicators containing information relevant to the Team's work. These documents included, but are not limited to:

- NRC inspection reports documenting inspections of Salem 1 and 2 and Hope Creek conducted in 2003.
- Salem and Hope Creek documentation closing out corrective actions arising out of NRC inspection findings.
- Policies and procedures implementing PSEG expectations to maintain a SCWE with respect to the four SCWE elements.
- PSEG management communications of SCWE expectations and other actions and programs intended to encourage personnel to raise issues.

- Training provided to the Salem / Hope Creek workforce on SCWE and SCWE-relevant information.
- ECP materials and performance indicators.
- The CAP and associated performance indicators.
- Processes by which significant proposed adverse employment actions are reviewed.
- The number, nature, and trend in NRC allegations, NRC allegations referred back to PSEG to investigate, and the adequacy of PSEG's response to these referred allegations.
- The number, nature, and trend in any claims of retaliation over the past several years, including management actions to address any potential chilling effect arising from such claims.

IV. PRIOR SCWE REVIEWS

As contemplated by the NRC's January 28, 2004 letter and indicated in PSEG's February 27, 2004 letter, the Independent Assessment considered the sufficiency of PSEG's prior initiatives and efforts to assess and enhance the work environment. The Team's review included the results of the December 2003 Synergy Survey and the March 2004 USA Assessment. Enclosure 8 provides a tabular representation of the SCWE-related areas reviewed by the Independent Assessment, Synergy, and USA. In addition, the Independent Assessment examined quarterly surveys of Salem and Hope Creek personnel conducted by the PSEG ECP since 1995, and a review conducted by the law firm Winston & Strawn on behalf of PSEG in response to a 2003 concern raised by a former employee. What follows is a brief description of these reviews, the Team's evaluation of the sufficiency of those assessments, and PSEG's efforts to enhance the work environment.

A. Synergy Survey

1. Purpose and Scope of the Synergy Survey

The December 2003 Synergy Survey was designed to characterize Salem and Hope Creek organizational attitudes and culture, to determine areas of relative strength and weakness, and to identify individual organizations that depart from nuclear industry and/or PSEG performance norms. The Synergy Survey focused on three general areas: (1) nuclear safety culture; (2) general culture and work environment; and (3) leadership, management, and supervisory behaviors and practices.

2. Process

The Synergy process was survey-based, meaning that its findings were based exclusively on data obtained from a survey provided to Salem and Hope Creek personnel. The Synergy Survey consisted of 168 multiple-choice questions, and two opportunities for the employee to write in comments. Seventy-four subparts were directly relevant to Synergy's review of the Salem and Hope Creek safety cultures, including SCWE, with nineteen questions specific to SCWE and ten questions specific to the ECP.

The vast majority of the survey questions were positive statements to which employees rated their degree of agreement or disagreement. A few questions sought ratings of adequacy of an area of performance or the environment, and others requested a yes or no response. The Synergy response scales had a “mid-point” value of 3. Thus, scores greater than 3 represented positive or adequate responses and less than 3 represented negative or less than adequate responses. Synergy computed means and standard deviations for each question. Synergy further calculated weighted mean value scores for its “cultural models” based on its experience (conducting over 80 surveys at more than 35 commercial nuclear sites) on the significance of the information elicited by the question to the culture or work environment.

3. General Findings

Considering the broad scope of the Synergy Survey, some, but not all, of its findings are relevant to the Independent Assessment. The areas of the Synergy Survey of most relevancy to the Independent Assessment are “Composite” ratings of SCWE and the ECP. In addition, the evaluation of certain aspects of the “Nuclear Safety Values, Behaviors and Practices,” “Leadership Behaviors and Practices,” and “Personnel Management Behaviors and Practices,” areas of the Synergy Survey also provided information relevant to the Independent Assessment.

Of particular interest to the Independent Assessment, the Synergy Survey resulted in the following findings:

- 99.2 percent of the survey respondents indicated that they would inform their supervisor if they identified a potential nuclear safety issue or concern. A similar number (97.6 percent) indicated that PSEG genuinely encourages its employees to identify potential nuclear safety concerns or issues, and 96.5 percent stated that their immediate supervisor receives raising potential nuclear safety concerns or issues favorably.
- The Salem and Hope Creek site’s SCWE is rated “Acceptable”; however, it does not compare favorably to the rest of the nuclear industry. The specific numerical rating of 4.31, places the site in the 11th percentile of commercial nuclear power plant sites within the Synergy industry database.
- The Salem and Hope Creek ECP is rated “Adequate,” but again, its relative stature places it in the 16th percentile of commercial nuclear power plant sites within the Synergy industry database.
- The Salem and Hope Creek site is rated in the low end of “Good” in the area of Nuclear Safety Values, Behaviors and Practices, placing it in the 11th percentile of commercial nuclear power plant sites within the Synergy industry database.
- The Salem and Hope Creek site is rated at the low end of “Adequate” in the area of Leadership Behaviors and Practices, placing it in the 11th percentile of commercial nuclear power plant sites within the Synergy industry database.
- The Salem and Hope Creek site is rated at the low end of “Good” in the area of Personnel Management Behaviors and Practices, placing it in the 44th percentile of commercial nuclear power plant sites within the Synergy industry database.

4. The Independent Assessment Team's Evaluation of the Synergy Survey

The Synergy findings are consistent with those of the USA Assessment, as well as the findings of this Independent Assessment. Synergy Consulting Services is a well-respected organization providing consulting and assessment services to a large segment of the nuclear power industry. Synergy has conducted more than 80 cultural assessments within the nuclear industry at more than 35 nuclear power plant sites. Synergy's data collection and analytical methods have been accepted as able to provide useful and accurate information regarding a nuclear plant's culture. Accordingly, the findings arising out of the Synergy Survey listed above are considered to accurately reflect the Salem and Hope Creek culture, and are considered valuable data points in the current Independent Assessment.

PSEG Nuclear management appears to be taking a comprehensive response to the Synergy Survey. Upon receipt of the results, management created seven employee-led teams to analyze the results and provide to management proposed corrective actions, and also took other actions outlined in PSEG's February 27, 2004 letter to NRC. Management is intending to consider those recommendations, together with those from the USA Assessment and this review, and develop an integrated plan. Although management's initial response is sound, it is too soon for this Team to further characterize or assess the sufficiency of the response.

B. USA Safety Culture Assessment

1. Purpose and Scope of the USA Safety Culture Assessment

The specific objectives of the USA Assessment were to evaluate the station's culture against the five attributes of a strong safety culture identified in INPO SOER 02-04, namely:

- Employees are encouraged to identify degraded conditions and demonstrate a willingness to escalate their concerns when the conditions are not corrected.
- Station personnel pursue resolution of important and long-standing equipment and material problems, and execute plant shutdowns, if appropriate, to effect repairs.
- Management is involved in important plant activities, especially those having the potential to affect nuclear safety, and exercises accountability and follow-up as appropriate.
- Managers seek critical feedback from both internal and external sources, and first-hand information is actively sought from those personnel intimately involved with the issues.
- Events determined to be significant by the station are recognized and aggressively addressed to determine their root causes and the corrective actions necessary to prevent recurrence.

2. Process

The USA Assessment combined data review, interviews, and behavioral observations to assess station management behaviors against key principles outlined in INPO Document, "Principles for Effective Operational Decision-Making" and related documents. The USA Assessment was conducted in three phases: (1) Pre-screening Data Collection and Review; (2) Assessment Implementation; and (3) Final Report Preparation with Recommendations.

The USA team conducted four days of behavioral observations and interviews of station personnel. The USA team observed daily plant meetings, safety review committee meetings, pre-job briefs, corrective action report screening meetings, and others. The USA team also conducted structured interviews of a cross-section of employees at all levels of the organization, including key executives. Based on the information obtained from interviews, observations, and data reviews, the team created and scored a matrix based on INPO's "Principles for Effective Operational Decision-Making," and a "Leadership Matrix" developed from INPO's "Warning Flags from Plants in Extended Shutdowns."

USA team leads debriefed senior management on the results of the assessment during the assessment week, and provided an overall debrief with the workforce at the site at the exit meeting.

3. General Findings

USA provided its final report to PSEG on April 12, 2004. Of particular interest to the Independent Assessment, USA concluded, with respect to the INPO SOER safety culture attributes:

- Site personnel would escalate nuclear safety concerns when not previously addressed or corrected. Yet, some personnel were reluctant to use the CAP to document issues because they considered the CAP burdensome or not an instrument to improve performance.
- The CAP has not been effective in improving station performance. Ineffective corrective actions have led to multiple repeat equipment issues. Leadership weaknesses have contributed to inadequate work management stakeholder accountability, work management process inefficiencies, and ultimately to equipment reliability problems.
- The senior leadership team has not established a compelling, visible message that reinforces a strong safety culture.
- The management team does not effectively use trending and performance monitoring data, and internal or external operating experience to the level expected by a learning organization to improve performance.
- Numerous repetitive equipment issues demonstrate weaknesses in the corrective action and work management programs. There appears to be a lack of confidence in the site's ability to resolve equipment issues on the first attempt, on schedule, or in a timely manner.

4. The Independent Assessment Team's Evaluation of the USA Assessment

The Team developed information that generally complements and corroborates information documented in the USA Assessment. USA has performed assessments of the safety culture at numerous commercial nuclear power plant sites. Their data collection and analysis methods are considered to provide accurate and useful information. Further, their recommendations are developed based on first-hand observations and data review. Accordingly, the findings arising out of the USA Assessment listed above are considered to accurately reflect the Salem and Hope Creek safety culture, and their recommendations should be given appropriate weight. Similar to how PSEG is responding to the Synergy results, although the

initial approach appears to be sound, it is too soon for this Team to further characterize or assess the sufficiency of PSEG's response.

C. Quarterly PSEG SCWE Self Evaluations

1. Purpose and Scope of the PSEG SCWE Self Evaluations

The PSEG ECP has conducted a self-evaluation of the site's SCWE since 1995. The primary component of the evaluation is a SCWE survey provided at least annually to the Salem and Hope Creek workforce. In addition to the survey results, the ECP Manager considers such SCWE performance indicators (PIs) as the number of CAP Notifications, NRC allegations, and ECP activity.

The SCWE survey is derived from an NEI template, which is also the template for similar surveys used as self assessment tools at other commercial nuclear power sites. The survey consists of twenty-one statements to which respondents provide their level of agreement or disagreement (fully agree, strongly agree, generally agree, disagree, or strongly disagree). The survey statements elicit respondents' views on each of the following substantive areas, "Safety Conscious Work Environment," (five statements) "Employee Concerns Program," (five statements) "Management," (five statements) and "Corrective Action Program" (six statements). The survey also provides room for respondents to write in comments.

2. Process

For the past few years, PSEG has provided the survey to one quarter of the site's population each quarter, thereby ensuring that the entire site population is given an opportunity to be surveyed annually. Surveys are distributed in hardcopy format, completed anonymously, and returned to the ECP Manager for processing. The ECP Manager analyzes survey responses by question and tabulates results.

The ECP Manager creates a summary table of the results for site-wide distribution. The ECP Manager also reviews each write-in comment, removes any personnel information (*e.g.*, names or titles) and identifies which one or more of the four substantive areas it concerns. The ECP Manager then prepares a short write up providing his view of the site's SCWE based on the survey results. This write up is published in the site newsletter, the Outlook. The ECP Manager also distributes via email to all management personnel above first-line supervisor, a copy of the redacted survey comments. Finally, the ECP Manager prepares a short presentation providing his view of the state of the site SCWE based on the survey results, SCWE PIs, and his own personal experience as ECP Manager. The presentation is provided to the PSEG Nuclear Review Board (NRB) for their consideration. The Team reviewed copies of the most recent SCWE survey results and the corresponding NRB presentations.

3. General Findings of the PSEG SCWE Self Evaluations

Tables of the most recent PSEG SCWE survey results (third quarter of 2003), together with the average results for the last four quarters, are provided later in this Report. The ECP Manager concluded that a SCWE exists at Salem and Hope Creek, although "it faces challenges that we must all be prepared to meet." However, the ECP Manager indicated to the workforce that "things remain generally positive and appear more stable since the downturn in the fourth quarter of 2002."

The ECP Manager summarized the results of the third quarter SCWE self evaluation to the NRB stating that “there is a SCWE at PSEG Nuclear, LLC, however, there are numerous and significant challenges to it.” In particular, the ECP Manager highlighted “reorganization,” “increased level of expectations,” and “enforcing accountability” as major challenges, which have led to “uncertainty” and a “setback to the manager / union relationship.” The ECP Manager also highlighted four site organizations he characterized as “hot spots,” indicating that they exhibited some level of SCWE challenges. These organizations were Security, Chemistry, Operations, and Engineering.

4. The Independent Assessment Team’s Evaluation of the PSEG SCWE Self Evaluations

The PSEG SCWE survey is an adequate tool to obtain at least some of the information necessary to assess the SCWE. However, the survey, together with the review of certain SCWE PIs, has not been effective to assess and enhance the work environment. This appears to have resulted from a combination of an unclear message from the ECP Manager to PSEG management as to what needs to change, coupled with a lack of responsiveness by nuclear management to the message. For example, while sites with strong SCWEs routinely show positive results well above ninety percent in most or all four SCWE attributes, PSEG’s results were in the seventy-five to ninety percent range. Of particular concern is that these results have not shown significant improvement over several years. Further, although the ECP Manager properly identified challenges to SCWE at Salem and Hope Creek, no recommendations to address these challenges appeared in his NRB presentation, or are reflected in the minutes of the NRB meetings. Finally, other nuclear sites have found it particularly useful to gather survey respondent data of sufficient specificity to permit a more focused examination of the work environment. In particular, requesting participants to identify the Unit and Department for which they work would allow better identification of SCWE-challenged pockets within the organization and allow focused corrective actions by management.

D. Winston & Strawn Review

1. Purpose and Scope of the Winston & Strawn Review

In a letter dated March 25, 2003, a former PSEG employee (the concerned individual or CI) claimed that she was terminated by PSEG in retaliation for raising nuclear safety concerns. The CI claimed that the concerns motivating her termination consisted of issues she relayed to senior management regarding their “leadership weaknesses, failings, and inadequate attention to employee-raised issues.” These issues were purportedly based on her own observations and information provided to her by other members of the PSEG Nuclear organization. In this regard, the CI described a number of specific interactions she had with members of the management team.

PSEG chartered the law firm Winston & Strawn (Winston) to conduct an investigation into all of the CI’s concerns. The scope of the investigation was identified in a charter, which stated that Winston would address the following concerns:

- A. Has senior management created a work environment within PSEG Nuclear that is conducive to raising and addressing nuclear safety concerns?

- B. Has [the CI] been retaliated against for raising nuclear safety issues? Specifically, is there a nexus between [the CI's] termination and the raising of nuclear safety issues?

In addition to these particular areas of review, Winston investigated and made findings regarding nineteen separate allegations of fact contained in the CI's letter or discussed by her in a meeting with the ECP Manager.

2. Process

After raising her concerns, the CI refused to make herself available for an interview, which would have enabled the reviewers to understand the precise basis for her concerns. Without the benefit of such an interview, Winston interviewed twenty-eight individuals from the PSEG Nuclear management team, including those persons specifically named in the CI's letter, and other employees of PSEG, PSEG Nuclear, and PSEG Services Corporation. To assess whether the work environment was conducive to employees' raising and management addressing nuclear safety concerns, Winston relied primarily on PSEG's quarterly workforce SCWE surveys, although it also reviewed additional relevant documentation, such as ECP PIs, comments provided by survey participants, other work environment assessments, and presentations made by the ECP manager. Winston assessed whether a chilling effect existed among the concerned individual's peers based on the views of the persons interviewed regarding their own and others' willingness to bring forward concerns.

3. General Findings of the Winston & Strawn Review

With regard to the work environment, Winston concluded that employees, including the CI's peers, feel free to raise concerns without fearing retaliation for doing so. As stated in the Winston report:

[I]n general, the Investigation Team, relying on the company's routine assessment of the safety-conscious work environment at the site, concludes that employees feel free to raise concerns without fear of retaliation. Specifically, with respect to [the CI's] allegation, the Investigation Team, relying on the numerous interviews [conducted] ... concludes: (1) that there *is* an environment in which employees feel free to raise concerns without fear of retaliation and (2) that [the CI's] peers have not been "chilled" or "discouraged" from raising concerns of their own.

Nonetheless, the Investigation Team also found that:

Certain persons may be hesitant to raise industrial safety concerns, not out of fear of reprisal, but rather because of frustration over the backlog of industrial safety issues and a perception that "their" issue may not get resolved to their satisfaction.

4. The Independent Assessment Team's Evaluation of the Winston & Strawn Review

The Independent Assessment Team did not evaluate the merits of the CI's claim of retaliation and whether Winston appropriately reviewed that claim. PSEG did not request that Winston conduct a comprehensive SCWE assessment, but rather, investigate specific concerns and determine whether senior management created a work environment conducive to raising and addressing nuclear safety concerns. Given that charter, Winston sought to interview the CI, and she refused. Winston's statement of findings, quoted above, make clear that it did not conduct a

full SCWE assessment. Winston relied upon its own interviews and the previous PSEG surveys. Although the PSEG surveys did not capture many of the issues eventually identified in the Synergy Survey, the USA Assessment, and this Independent Assessment, the Winston review did capture a key finding that the workforce will raise a nuclear concern, but a number of people will hesitate to raise lesser concerns because of frustration over management not resolving issues.

E. Overall Sufficiency of PSEG Prior Efforts to Assess and Enhance the Work Environment

The Team concludes that, prior to 2003, PSEG Nuclear's efforts to assess and enhance the work environment were limited. The Team further concludes that, beginning in 2003, with the initiation of the Synergy Survey and USA Assessment, management has taken sufficient steps to assess the work environment. Although it appears to the Team that PSEG has taken appropriate initial and immediate actions in response to these two recent initiatives as reflected in PSEG's February 27, 2004 letter to the NRC, it is too soon for the Team to further characterize or assess the sufficiency of PSEG's response. In this regard, PSEG plans to consider the findings and recommendations of these initiatives, together with this report, in formulating a comprehensive set of actions to enhance the work environment.

V. INDEPENDENT ASSESSMENT FINDINGS

In requesting that PSEG conduct an in-depth review, NRC referred PSEG to its own inspection record and certain unspecified unresolved conflicts involving operational decision-making. PSEG also asked the Team to consider any impact on the work environment from the corporate / site interface. In organizing its findings, the Team first reviewed the SCWE implications of: (1) NRC's inspection record (Section A); (2) events involving operational decision-making and unresolved conflicts (Section B), including their SCWE and broader management implications (Section C); and (3) the corporate / site interface (Section D). The Team then made findings relative to the four SCWE criteria: (1) employee willingness to raise concerns (Section E); (2) effectiveness of the normal processes for resolving concerns (Section F); (3) effectiveness of the ECP (Section G); and (4) management effectiveness in detecting and preventing retaliation and chilling effect (Section H).

A. Review of Prior NRC Inspection Findings

1. Review for Cross-Cutting Issues

The NRC's January 28, 2004 letter referred to substantive cross-cutting issues that have been identified in NRC inspection reports in the problem identification and resolution area. In response to the NRC concern, PSEG directed a review of the NRC inspection record to determine if there were latent indicators within the collective body of reports that warranted further actions. Additionally, the Team reviewed several individual corrective actions in response to NRC violations to ensure PSEG has taken appropriate and timely actions to correct the underlying condition.

The Team reviewed a sample of twenty NRC inspection findings from the Hope Creek Unit, set forth in Inspection Reports Nos. 2003- 2 through 7. The Team also reviewed twenty-eight NRC inspection findings from the Salem Units, set forth in Inspection Reports Nos. 2003- 3 through 10. The Team categorized the findings relative to the NRC regulatory requirements

(e.g., Technical Specification 6.8.1 or 10 CFR 50, Appendix B, Criterion III), apparent responsible functional organization, and common causes (Enclosure 9).

2. Findings

The analysis of the NRC Inspection Reports disclosed that there are nine NRC inspection findings across Salem / Hope Creek that contain failures to translate engineering requirements into working documents such as procedures and operability determinations. This suggests a weakness in the engineering common interface through which information is transmitted.

The analysis also revealed that five of the Salem units' findings relate to a failure to take prompt corrective actions. Of the five findings, three are attributable to the Maintenance organization, indicating that a timeliness issue resides with this group.

Lastly, the analysis indicates that there is a grouping of seven findings for the Salem units that relate to a failure to take effective corrective actions. These findings would normally be attributed to the CAP, but appear to relate more to corrective actions taken by the Engineering and Maintenance organizations.

A review was conducted of six of the inspection findings out of the population of forty-eight items examined for cross-cutting issues above. The review focused on the completeness and timeliness of the actions.

The following issues were examined:

UNIT	INSPECTION REPORT	NOTIFICATION	SUBJECT
Hope Creek	2003002	20122599	HPCI Oil Cooler
Hope Creek	2003002	20123601	HPCI Design Calculations
Salem	2003008-01	20153983	500kV Breaker Fault
Hope Creek	2003004	20140525	Post Scram Water Level Control
Hope Creek	2003002	20148750	A EDG Intercooler Water Pump
Salem	2003005-03	20140179	Reactor Pressure Transient (2PS3)

In general, the corrective actions were comprehensive and timely. Two out of the six issues were stated as "TECO" or Technically Completed. The remainder are coded "PCNF" or Partially Confirmed, implying they are still in process. The Salem 500kV Breaker Fault and the Hope Creek [A] Emergency Diesel Intercooler Water Pump events were treated as Level 1 and required a formal root cause analysis. The following concerns were identified:

The [A] Emergency Diesel Generator Intercooler Water Pump root cause evaluation identified that the engine oil analysis exhibited higher levels of copper and lead, which was considered a precursor to the failure of the pump bearing. The report noted that the copper level was 12 ppb (parts per billion) and the lead was 2 ppb. One of the corrective actions directed that the engine oil be periodically analyzed and if the copper content rose by 3 ppm (parts per million) it would prompt actions to determine the cause. There is a technical disconnect if, in fact, the copper content was measured at 12 ppb for the break down of the pump and the action level is 3 ppm, many orders of magnitude higher. Discussions with the engineer responsible for

the oil analysis indicated that the report was incorrect in stating “parts per billion” and it should be “parts per million.”

The NRC Inspection Report 50-354/ 2003004 cited Hope Creek for failing to have approved procedural guidance to support planned outage activities. The report describes a condition where the reactor had just been scrammed to start the outage. The control room supervisor directed the reactor operators to maintain the reactor water level at 5", contrary to the Emergency Operating Procedure and the Abnormal Operating Procedure, which specify 12.5" to 54". The control room supervisor directed the operators to maintain this level in order to perform an outage related test on the scram discharged volume. The NRC Inspection Report further states that the NRC inspector noted that “the CRS level band was in conflict with the PSEG scram and EOP procedures.” Similarly, the Operation Key Info 8060436 states, “Further review of the actions taken to stabilize RPV level post-scram were found to be inappropriate. The CRS did not establish a level band of 12.5" to 54" as required by the EOP...”

The Notification Overview sheet, Notification 20140525, item 5 states, “No procedures were violated...” This statement is inconsistent with the recorded facts and implies that no deviation from the procedures occurred. As noted in Section V.B. of this report, there has been a history of procedural compliance issues at the site. This is another example of a failure to follow the procedure by the operator, and represents a missed opportunity to set management standards and expectations.

B. Review of Events Involving Operational Decision-Making and Unresolved Conflicts

The NRC letter of January 28, 2004 referred to events at Salem and Hope Creek that have involved operational decision-making and unresolved conflicts that call into question whether PSEG management has fully assessed and effectively addressed the unintended or mixed messages received by station personnel arising out of the events. Responding to this finding, the Team identified and evaluated a number of events to understand how they may have impacted the station’s SCWE, so that recommendations could be made to PSEG management to address such impacts.

The Team identified the seemingly more significant unresolved conflicts using documents, such as NRC Inspection Reports, Synergy Survey results, and the USA Assessment, and information gathered from personnel interviews. Particular events were initially selected based on the number of times the events came up during interview discussions, the apparent impact on the workforce from the event, and the depth of sentiment that may have been evident during interview discussions.

The Team selected fourteen events that appear to have sent an unintended or mixed message to the workforce relative to management’s expectations for workers to raise and / or PSEG to address issues. The events identified by the Team are depicted in Enclosure 10, together with the specific areas of perceived unresolved conflict as defined in Enclosure 11. PSEG should consider these events illustrative, not exhaustive of employee-management interactions that sent a mixed or unintended message as to PSEG’s true expectations for an environment to raise and resolve issues. In this regard, the Team considered other events which have SCWE significance and illustrate many of the SCWE issues identified in the fourteen events, including: the 2003 shutdown of Salem following significant salt deposits on transmission lines following a storm; repair of the Hope Creek “B” diesel generator jacket water

leakage; Salem boron dilution discrepancy; Salem source range anomalies; and the Hope Creek main steam isolation valve drifting closed on loss of isolation gas.

What follows for each of the fourteen events is (1) a description; (2) observations/perceptions; and (3) SCWE and related implications. The description of each event is based upon information the Team gained from the interviews and, in some cases, documents such as NRC Inspection Reports. The Team did not attempt to describe the events in detail, but has provided enough information to give the reader context for the SCWE significant aspects of the event. The documented perceptions are based upon information provided, and opinions and feelings expressed by individuals either involved in or having knowledge of the event. The Team limited its review and conclusions to the apparent unresolved conflict. Although establishing a SCWE is the primary responsibility of management, these events show that inappropriate actions were taken and decisions made by personnel at all levels of the organization.

1. Circulating Water System Level Instrumentation (Salem, December 2003 – January 2004)

a. Description

Differential pressure instrumentation senses the water elevation change across the circulating water system screens. This instrumentation causes circulating water pumps to trip if the differential pressure across the screens increases to a certain level. Instrumentation readings become erratic in freezing weather. Operations management issued a temporary standing order (TSO) to address this recurring problem, which allowed for the bypass of the trip functions of the instrumentation associated with a screen, so that the corresponding circulating water pump would not be unnecessarily tripped. Some Operations personnel expressed concern over bypassing the automatic trip functions and the use of a TSO, rather than a procedure change, to specify operator actions.

b. Observations/Perceptions

- There was a difference of opinion regarding the operation of the circulating water system. Some operators felt that bypassing the automatic circulating water pump trip function was not conservative. Contrary opinion considered it to be an appropriate, yet difficult decision because it went against common sense. An Assistant Operations Manager (AOM) said he wrote an on-the-spot change to the procedure to prevent unit trips or transients from the freezing sensors. (Management / Labor Interface, Non-Conservative Decision-Making)
- Some operators felt that a TSO was written simply out of convenience and that the proper course of action was to generate a procedure change. In this regard, two AOMs referenced the writing of an on-the-spot procedure change to bypass the automatic trip functions. (Procedure Adherence)
- Some Nuclear Equipment Operators (NEOs) stated that they did not have a clear understanding of the conditions and expected compensatory actions. An NEO raised concerns regarding bypassing the trip function to the circulating water supervisor and the shift manager, but did not write a Notification because of the TSO. (Communication of Issues)

- Some operators viewed management's actions as an example of a production mentality, in particular, that management failed to take actions specified by plant procedures or take the actions to correct the recurring instrumentation problem and, instead, tolerated degraded conditions. (Schedule and Production Issues)
- An NEO indicated that his immediate supervision advised him they weren't going to challenge the decision to bypass the trip function. (Chilling Effect)

c. SCWE and Related Implications

Management was not effective in resolving this issue and tolerated a recurring instrumentation problem. Management's perceived preference for production over procedural adherence could discourage the raising of concerns that have the potential to impact safe plant operation. Management was not effective in communicating and addressing differences of opinion regarding the operation of the circulating water system. Management did not effectively communicate why the compensatory actions taken were appropriate and in accordance with conservative decision-making. Management also did not effectively communicate appropriate operator expectations and actions regarding use of a TSO, versus a system operating procedure change.

2. Subcriticality (Hope Creek, November 2003)

a. Description

Operators were returning the unit to service following an outage. Operators needed to ready the reactor core isolation cooling system (RCIC) for service prior to reactor pressure reaching 150 psig to comply with Technical Specification requirements. In order to prevent exceeding 150 psig, the operators stopped withdrawing control rods. As a result of a previous reactivity event in March 2003, management prohibited the operators from using the bypass valve jack when the reactor is critical to control reactor pressure (hence temperature) and the heat-up continued. The negative reactivity temperature coefficient caused the reactor to go subcritical. The procedure did not provide clear direction as to what actions needed to be taken prior to resuming the start-up.

b. Observations/Perceptions

- A member of the operating shift did not view management's decision to prohibit the use of the bypass valve jack to be well thought out. The plant manager also thought the corrective action from the previous event was inappropriate. A member of Operations management viewed the operators' decision to re-commence the start-up after the reactor went subcritical as a non-conservative decision. (Non-Conservative Decision-Making)
- Management believed the operators did not properly plan the start-up by not having RCIC available. The operators felt that prohibiting the use of the bypass valve jack as a means of pressure control was the source of the problem. The operators involved with the start-up felt that they did a good job. Quality Assurance initiated a Level I Notification against resuming the start-up because the procedures did not cover the specific operator decisions and actions. (Differing Views of Performance, Procedure Adherence)

c. SCWE and Related Implications

The event calls into question management's effectiveness in resolving a problem. This event also indicates that management standards and expectations regarding procedure use and adherence have not been followed, clearly understood, or well communicated.

3. Feedwater Regulating Valve (Salem Unit 1, October 2003)

a. Description

Operators took manual control of a feedwater regulating valve in response to an annunciator trouble alarm. Field reports indicated that the likely source of the problem was the digital feedwater control system and not the valve. Some of the crew believed early in the event that the valve was stuck. Troubleshooting efforts, including mechanically agitating the valve, and training operators in the simulator for the shutdown continued for a number of hours. Eventually, the valve was declared inoperable and the plant entered Technical Specification shutdown actions.

b. Observations/Perceptions

- Two Nuclear Control Operators (NCOs) told the Control Room Supervisor (CRS) and/or the Shift Manager (SM) that they didn't agree with the field reports indicating that the valve was not stuck. (Management / Labor Interface)
- A number of operators and a CRS viewed the event as an example of non-conservative decision-making. At least two NCOs and a CRS on Salem 2 felt that the time to conclude that the valve was stuck and shut down the plant was excessive. Others felt the valve should have been declared inoperable immediately. One NCO viewed the delay as supervision's and management's attempt to prove operability. Another CRS, however, didn't consider the actions to be non-conservative; similarly, a Shift Technical Advisor (STA) felt the conservative decision was to wait and see how the valve would respond. (Non-Conservative Decision-Making, Schedule and Production Issues)
- One NCO believes that the decision was elevated to management above shift management, and that this is why it took so long to begin the shutdown. (Inappropriate Decision Level)
- Multiple parties, including a member of senior plant management, agree that it took too long (approximately 12 to 16 hours) to conclude that the valve was mechanically stuck and begin to shut down the plant. (Untimely Decisions)
- Two NCOs on shift when the issue arose, and at least one NEO, heard second-hand that the valve was mechanically agitated or struck with a tool (*i.e.*, trying hard to prove it wasn't stuck). An Assistant Operations Manager (AOM) said he directed personnel to stop hitting the valve with a tool because it wasn't moving. (Differing Views of Performance)
- An AOM first heard about the issue when he came in at 8 a.m., versus 3 a.m. when the problem was discovered, and said he understood that the crew and technicians didn't really think the valve was stuck, rather that it was an actuator problem. Also, the AOM understood that the CRS had twice asked if anyone [on shift] had any

issues. Two NCOs indicate that they communicated their views on the valve being stuck to the CRS and / or SM during the shift and were surprised when they came back in the next night and the plant still wasn't shut down. An STA said that when he left the shift nobody was arguing to take the unit down. Another AOM said the most vocal feedback was from an NCO about the time it took to make the decision to shut down, but the SM claims that the NCO didn't express those concerns the night the issue arose. Within a few days of the problem, an NCO questioned the AOM about the length of time it took to make the shutdown decision, and a couple of days later he raised the same issue to a member of senior plant management. An AOM said that he had to wait for an independent STA evaluation (approximately December 2003) and didn't provide feedback to the NCO regarding the decision-making process in this matter until approximately February 2004. (Communication of Issues)

c. SCWE and Related Implications

The seeming lack of response to the two NCOs who, early in the event thought the valve was stuck, coupled with a perception that management was taking too long and trying too hard to prove it wasn't stuck, is not conducive to an environment seeking to promote the value of employees who are willing to raise concerns. Also, the length of time it took to conclude that the valve was stuck and begin to shut down suggests ineffective problem resolution. The extensive delay (three or four months) in providing meaningful feedback to the individual who questioned how long the decision-making process took, could discourage other workers from raising issues and concerns to their management.

This event also supports some employees' continued view of management as being more focused on production and scheduling, rather than on conservative decision-making. The event also illustrates the lack of effective communication between management and the line. There are numerous examples of communications breakdown in this event, to include: the AOM who felt he should have been notified in the early morning hours when the problem was first discovered; the personnel, including management, who believed that it took too long to declare the valve inoperative and begin the shutdown; and the length of time it took to provide meaningful and detailed feedback to the individual raising the timeliness concern.

4. Feedwater Pump High Vibration Alarm (Hope Creek, Fall 2003)

a. Description

A vibration alarm activated on a feedwater pump. Procedural guidance required lowering the pump's speed to clear the alarm. Shift management, however, instructed Operations personnel to delay implementation of this procedural step until Engineering evaluated the situation. This evaluation indicated that continued operation, without taking additional action, was acceptable. Operators questioned the direction to not follow the procedural guidance.

b. Observations/Perceptions

- One Control Room Supervisor (CRS) indicated that the procedure was unclear and that the vibration level was probably not exceeded, yet the pump should, nonetheless, have been backed down when they received the high vibration indication. A Nuclear Control Operator (NCO) said the indications were that they weren't dealing with an instrument failure, but Engineering said they were not near the point of tripping the pump, and that it was okay to continue to run it. Another NCO said management's

position was that they weren't really sure they had a high vibration level, so they (management) violated the first rule--*believe your indications*. The NCO was surprised by this event because it occurred under the plant's new management team. (Non-Conservative Decision-Making)

- One NCO believed that the decision to continue operating was made at a higher level than the shift manager (SM). The SM acknowledged recommending to the AOM that they didn't need to lower the pump's speed based on Engineering's input and an anticipated procedural change, which never materialized. (Inappropriate Decision Level)
- An NCO indicated that the plant operated for several days after exceeding the procedural guidance and before they removed the pump from service and completed an on-the-spot procedural change. (Untimely Decisions)
- Interviewees described confusion regarding the applicable procedural guidance. A NCO stated that the pump must be backed down when the vibration reached a certain level. Another NCO stated that the pump was to be removed from service because of the high vibration, and the procedure wasn't changed until the limit in the procedure had been exceeded. The SM recalled that the licensed operators questioned why the procedure was not being followed. The SM said that, in the future, they will respond as they would in a training scenario (*i.e.*, follow the procedure) if a similar event occurs. The SM also advised that, recently, the crew took a feedwater pump off-line and received positive reinforcement for doing so. (Procedure Adherence)
- The testimony of several NCOs indicates that either they did not understand or were not effectively informed of Operations management and Engineering's rationale for continued operation with the high vibration on the pump. (Communication of Issues)
- Based on the continued operation with the high vibration, at least one NCO felt the message was that if management doesn't like what they see, they will ignore it. The SM believes the operators perceived that acting contrary to procedural guidance was done to satisfy management's desire not to reduce power. (Schedule and Production Issues)

c. SCWE and Related Implications

The perception that management chose production or operational goals over strict adherence to procedural requirements can discourage operator willingness to raise procedural questions. Operators could infer that management is predisposed to analyze away such questions. Such behavior, in essence, dismisses their concerns, without offering them a sound basis or rationale for doing so.

There is also considerable sentiment that, in this event, management valued production-driven decision-making over conservative, prudent decision-making. The lack of alignment between the operators' and management's perceptions and understanding of the rationale for continuing to operate the pump also challenges the workforce's view of management's expectations for procedural compliance.

5. High Off Gas Flow (Hope Creek, March 2003)

a. Description

Prior to the Hope Creek spring 2003 outage, personnel detected elevated off gas flow rates. The flow eventually exceeded the procedural guidance limits. The situation was documented via a log entry and Notification, and shift personnel questioned the continued operation of the plant with the elevated flow. The procedural limit was subsequently changed, with an operator also questioning perceived weaknesses in the evaluation allowing the limit to be raised. The flow limit was subsequently changed back to its original value after the condition was corrected during the outage.

b. Observations/Perceptions

- A Nuclear Control Operator (NCO) questioned the evaluation for continued operation during a shift meeting. The Shift Manager (SM) emphatically reiterated the new limit number and called the NCO into a private meeting after the briefing. The NCO said the SM advised him that he didn't appreciate him bringing up those questions in that forum (*i.e.*, the shift briefing). The rest of the shift the NCO was kidded (good-naturedly) by a Nuclear Equipment Operator (NEO) about raising the issue. The message to the NCO was not to bring up such issues during a shift briefing. (Management / Labor Interface, Inappropriate Behavior, Chilling Effect)
- Several NCOs, and at least one NEO, viewed continuing to run with the elevated flow rate as non-conservative decision-making, driven by management's desire to keep the plant running, no matter what they needed to do. (Non-Conservative Decision-Making, Schedule and Production Issues)
- The plant continued to operate with off gas levels above the original procedural limit. Further, the testimony indicates that operations continued, even after the adjusted limit was exceeded, and until the scheduled outage. (Untimely Decisions)
- One Control Room Supervisor (CRS) indicated that the procedure didn't specifically require the plant to shut down upon exceeding the off gas limit. For that reason, continuing to operate while troubleshooting was acceptable to him. Other operators, however, thought that not backing down in power was the wrong decision. An NCO cited the crew being questioned by the assistant operations manager (AOM), after a training exercise and prior to the actual event, as to why, with a fuel leak and elevated release levels, it took them so long to take the unit off-line in the training scenario. An NCO also described another NCO as checking with other members of the crew and then recommending they take the unit off-line in the face of the elevated off gas levels. (Differing Views of Performance)
- Numerous operators noted that management appeared to have a flexible view of procedural guidance in this case (*i.e.*, they were willing to draw new lines in the sand). One NCO observed that after the condition was corrected (during the outage), the procedure was changed back to its normal limit. (Procedure Adherence)
- Management failed to effectively communicate the justification for operating beyond the original procedural limit. For example, when a NCO questioned apparent weaknesses in the evaluation justifying raising the limit, he was told what the new

limit was, without further discussion. Further, numerous operators questioned the advisability of continuing to operate with the rising off gas level. (Communication of Issues)

c. SCWE and Related Implications

Management's response to this event could impact the willingness of workers to raise, revisit, challenge, or push an issue that management has already addressed. The general lack of agreement with management's decision to continue operating with the elevated off gas levels indicates that management was ineffective in communicating their justification for continuing to operate, and/or their resolution of the issue.

This event also represents another instance in which management is seen as being willing to circumvent a procedure that does not comport with the perceived goal of keeping the plant running, notwithstanding the reality of plant conditions. It also questions the quality and effectiveness of management's ability to communicate the basis for its actions regarding personnel matters.

6. Reactivity Event (Hope Creek, March 2003)

a. Description

Operators were performing a shutdown to repair a stuck turbine bypass valve, an action on which they had trained the previous evening. They were depressurizing the reactor using the bypass valve jack to control reactor pressure. Operators adjusted the electro-hydraulic control set point near the actual reactor pressure and a perturbation occurred on the bypass valves, resulting in a change in reactor pressure, level, and power.

The operators resumed the depressurization process using the bypass valve jack. The operators experienced a bypass valve cycling to 75 percent open and a drop in reactor water level. The reactor water level control system automatically started to restore level by increasing feedwater flow. The feedwater's low temperature led to a rise in reactor power. The reactor approached the Average Power Range Monitor's (APRM) scram set point of 15 percent before conditions stabilized. The operators took manual actions to control feedwater flow and adjusted the intermediate range monitors to stay within the appropriate range. The operators then continued with the shutdown.

b. Observations/Perceptions

- Although the operators involved in the event believed their actions in stabilizing the plant's conditions were appropriate, management removed the operators, including the shift manager, from shift operations for remediation. Operations personnel viewed management's actions as unfair and unwarranted, and part of a pattern of blaming the operating crew for plant events. (Differing Views of Performance, Management / Labor Interface)
- The operators felt they had "saved the plant" by their actions, while management viewed their actions as "heroic" but non-conservative. Some interviewees believe some operators still do not fully accept that their actions were inappropriate or recognize the significance of the event. The Shift Manager (SM) felt that the crew, himself included, wasn't sufficiently conservative in responding to this event. The current Operations Manager (OM) said the plan of action did not look like a good

one, and that they were working too hard to save the plant, versus protecting the plant (*i.e.*, allowing the plant to SCRAM). (Non-Conservative Decision-Making, Differing Views of Performance)

- Senior management contends that the operators did not follow procedures and should have manually tripped the unit. The SM stated that the operators did not act in full compliance with the procedure, because that was not how they trained in the simulator for the shutdown. (Procedure Adherence)
- The reactivity event occurred while shutting down to repair a stuck turbine bypass valve. Operations did not notify management of the unexpected change in reactor power at the time of the occurrence. The SM acknowledges not writing a Notification for the event until a day or two later. Senior site management didn't see a Notification until sometime the following day. (Communication of Issues)
- Operators, who received training the evening before to support the shutdown, felt time pressures during the training session. The Control Room Supervisor (CRS) felt that the procedure provided to them for validation and training purposes was inadequate. The short amount of time they were being given, approximately one-half of a shift, was not sufficient to establish a procedure and train effectively. The SM said that when they got to training, all they had was a draft of a procedure and no infrequently performed tests and experiments (IPTE) paperwork, which was very frustrating to the crew trying to work through the simulator training for the shutdown. (Schedule and Production Issues)
- In response to the event, a member of senior management issued a letter critiquing the event, providing expectations on conservative decision-making, and requesting a written affirmation from all Operations license holders. The operators were upset by senior management's letter and the union grieved it. The operators' lack of acceptance of management's expectations may indicate resistance on the part of operators to accept their role in non-conservative decisions. (Inappropriate Behavior, Management / Labor Interface)

c. SCWE and Related Implications

Although operators felt that there was not adequate time for procedure development and training, they did not voice their concerns to Operations management outside their shift. This may be indicative of operators being reluctant to escalate issues to a higher level to get them addressed. The letter from senior site management, wherein it stated expectations and requested a written affirmation from Operations personnel, was perceived by some as threatening. Differing views of the event's significance, operator performance, procedure adherence and usage, and the communication of issues associated with this event also indicate a weakness in management standards and expectations being effectively communicated and understood by Operations personnel. This event also reflects operators making non-conservative decisions and then not accepting responsibility for their actions when management attempted to enforce higher standards involving conservative decision-making.

7. Turbine Bypass Valve (Hope Creek, March 2003)

a. Description

The No. 2 turbine bypass valve didn't fully close as expected during a reactor start-up, at about 10 percent power after the generator was synchronized. Plant operators and maintenance personnel spent two days troubleshooting the valve. Throughout this period, the plant remained at power. Operations decided to develop a plan to shut down and repair the valve. The bypass valve closed during the shutdown. [Note: The reactivity event discussed above occurred during the course of this shutdown.]

After the valve closed, a meeting took place to discuss whether the plant could or should be restarted without determining the cause for the valve sticking open. An Assistant Operations Manager (AOM) wanted to remain shutdown to fix the valve because Operations did not understand why the valve stuck open. Others, including the Shift Manager (SM) and an outage representative, wanted to consider restarting the plant. Because no decision was made, a meeting was held involving senior site management and others. The AOM was required to justify shutting the plant down and keeping it down to fix the valve. The final decision was to shut down the plant and fix the valve.

b. Observations/Perceptions

- After recognizing that the valve was not operating properly (*i.e.*, they could stroke it open, but it wouldn't go fully closed), the operating shift decided to develop a plan to shut down. A Control Room Supervisor (CRS) said he understood that a member of senior site management was opposed to taking the plant off-line to fix the valve and pressured the AOM during a "heated discussion." A Nuclear Control Operator (NCO) felt that it took too long to take the unit off-line with a stuck open bypass valve. He viewed the time spent trying to fix it and get it shut, so as to keep operating, as non-conservative. (Non-Conservative Decision Making, Schedule and Production Issues)
- Although the decision was ultimately made to shut down the plant, senior plant management was directly involved in a decision that was more appropriately within the purview of licensed operators. The AOM was required to provide a significant amount of justification for shutting down, beyond what he thought was necessary. A SM heard the rumor that a PSEG Power officer called the control room and told Operations to stop depressurizing and get ready to start-up. The Team's interviews did not substantiate this rumor. A CRS understood that the AOM had a "heated" discussion with a member of senior site management, who said they weren't taking the unit off-line. A member of senior site management asked the AOM what they were going to fix, and specifically, what it was going to take to make the plant operable. A member of senior site management acknowledged that the AOM appeared to believe he was being challenged on his decision to bring the plant down, but that wasn't the intention, rather to gain alignment on the basis for the AOM's position. (Decision Unduly Challenged, Inappropriate Decision Level, Communication of Issues)
- The initial decision and action to begin shutting down the plant took nearly forty-eight hours. Plans to continue cooling down the unit after the reactivity event and the

valve shut were further delayed for three-to-four hours by the AOM's meeting with senior management. (Untimely Decisions)

- An AOM felt he had to respond to an inordinate number of questions in order to justify shutting down the plant. A CRS heard that the discussion was "heated." The AOM described the senior site manager's style as potentially intimidating to others, but not to him. (Inappropriate Behavior)
- In the wake of the reactivity and turbine bypass valve events, a member of senior site management was viewed by at least one CRS as putting out a two-page letter on how incompetent Hope Creek Operations was, which the CRS interpreted as management saying, if you disagree with me (*i.e.*, over the shutdown to fix the valve), you'll be sorry. Senior site management indicated that because of Operations' performance in conjunction with the reactivity event, management was seeking written affirmation from Operations personnel on conservative decision-making. (Inappropriate Behavior, Chilling Effect)

c. SCWE and Related Implications

A member of senior site management's perceived aggressive questioning of the AOM during a heated discussion to justify a conservative decision could likely discourage personnel from acting in a similar conservative manner. The involvement of senior-level management in this operational decision may further discourage challenging or presenting alternative views. This event also has been viewed by some as another example of senior management inappropriately inserting themselves into the decision-making process and sending the message that production and schedule drive operational decision-making.

8. Start-up Without Five Circulating Water Pumps (Salem Unit 2, February – March 2003)

a. Description

An intake grassing event at Salem 2 caused a trip of the unit. Operations management had decided that five circulating water pumps would be available before commencing the start-up. A member of senior site management, after a discussion with Operations management, decided that (the previously agreed upon) five circulating water pumps were not all needed to commence start-up.

b. Observations/Perceptions

- Operations personnel viewed senior site management's decision to be non-conservative, and an example of management's preference of production over safety. However, there were no technical specification constraints over starting the unit without the fifth circulating water pump, and management did not view that action as a challenge to safety. (Non-Conservative Decision Making, Production and Schedule Issues)
- Senior site management, not Operations shift management, drove the start-up decision. (Inappropriate Decision Level)
- A member of senior site management challenged Operations management's decision to hold start-up until five circulating water pumps were available during what has

been characterized as a “heated” conversation with the Assistant Operations Manager (AOM). (Decision Unduly Challenged, Chilling Effect)

- Operators also believed that they met management expectations by taking a stand on getting plant problems resolved, and were disappointed that senior management didn’t support Operations’ ownership of the plant. The rationale for the decision-making was poorly communicated, and it contradicted what the shift had been previously told. (Differing Views of Performance, Communication of Issues)
- A member of senior site management was described as growing impatient and decided to move the unit forward. The senior site manager’s challenge of Operations management’s decision, and the manner in which it was challenged, was considered by some operators as inappropriate behavior. The AOM said a member of senior site management accused the operators of being afraid to run the plant, a discussion that led him to feel verbally abused. (Inappropriate Behavior)

c. SCWE and Related Implications

The behavior and manner in which a member of senior site management challenged Operations management’s decision to wait until the fifth circulating water pump became available could have resulted in a chilling effect for those who were aware of the decision-making process. Operators felt that their decision not to continue with the start-up was an example of conservative decision-making, but management’s overruling of that decision may discourage similar conservative acts or the raising of concerns. This event also furthers the perception that production and scheduling concerns took precedence over conservative decision-making. When a member of senior site management intervened in the operational decision-making process to proceed with the reactor start-up with less than five circulating water pumps available, he essentially removed command and control from the licensed operators.

9. “B” Diesel Generator Exhaust Leak (Hope Creek, February-March 2003)

a. Description

Exhaust leakage from the “B” Diesel generator was allowed to occur for an extended period of time and was not effectively addressed by management. An operator assigned to the diesel generator area was taken to the hospital after inhaling diesel exhaust. Other Operations personnel also complained of negative physical side effects of the exhaust. Between the bargaining unit and Operations management, it was determined that Self Contained Breathing Apparatus (SCBA) would ensure the safety of personnel working in the diesel generator area when the diesel generator was in operation. The diesel generator was repaired during the March 2003 outage.

b. Observations/Perceptions

- Operators viewed subjecting operators to a hazardous environment and utilizing SCBAs, rather than correcting the problem, as non-conservative. One Control Room Supervisor (CRS) opined that it appeared that management came up with a compensatory measure for every safety concern they brought up. (Non-Conservative Decision-Making)
- The diesel generator exhaust problem had been allowed to continue, without correction, for an extended period of time. (Untimely Decisions)

- It is widely believed within the Operations Department that a member of senior site management had threatened bargaining unit management with insubordination if personnel were provided with SCBAs and they still refused to do the work. One bargaining unit individual felt that management’s actions and statements showed a “lack of concern.” The current Operations Manager (OM) described this issue as a “cornerstone event.” (Communication of Issues, Chilling Effect, Inappropriate Behavior, Management / Labor Interface)
- The organization believed that the repair could not be made within the diesel generator Limiting Condition for Operation (LCO) window; thus, management would not make the repairs. Operators perceived management’s decision not to immediately repair the leakage, and instead require compensatory personnel safety measures, as an indication that management placed production over safety. Radiation Protection (RP) personnel also became involved in this issue and questioned the decision to proceed with the work. (Schedule and Production Issues)

c. SCWE and Related Implications

Interaction among a member of senior site management, Operations personnel, and union leadership created the perception (real or imaginary) that discipline would follow for refusing to perform the work while wearing SCBAs. This could negatively impact employees’ willingness to raise similar safety issues. The failure of management to address the exhaust issue in a timely and satisfactory fashion contributed to the feeling that management was ineffective in resolving personal safety issues. This event also contributed to the belief that management viewed production as more important than safety. In this case, management was not willing to risk taking the diesel out of service to correct what was viewed as a significant safety issue. One individual stated the decision wasn’t consistent with a company that professes safety to be “number one.”

10. Early Lifting of Power Operated Relief Valve (Salem Unit 1, October-November 2002)

a. Description

In October 2002, a power operated relief valve (PORV) lifted prematurely at about 1800 psi (nominal lifting should occur at 2400 psi). When the PORV lifted, the operators lowered pressure to reseal the valve. When this was not successful, operators began to take action to depressurize the plant to repair the PORV. A member of senior site management requested that the reactor depressurization be delayed until Engineering could evaluate all available information.

The repair work revealed that maintenance had not been properly performed on the PORV during the prior outage, in that the bushing shims were left out during re-assembly. A review of the associated paper work determined that the workers and supervisor who had been responsible for the maintenance had failed to install bushing shims but reported otherwise. As a result, site management terminated the supervisor and two mechanics. The union grieved the termination of the two mechanics and had the terminations reversed.

b. Observations/Perceptions

- Senior site management's intervention gave the Assistant Operations Manager (AOM) the impression that management considered his command to lower pressure for stability as "going in the wrong direction" (*i.e.*, from putting the unit back on-line). (Inappropriate Decision Level, Untimely Decisions)
- The termination of the two mechanics created considerable tension between the bargaining unit and PSEG management. The terminations were not well coordinated within the company and, as a result, the two workers were subsequently returned to work. (Management / Labor Interface)
- The decision to fire the two mechanics created a difference of opinion between the bargaining unit and PSEG management on the level of discipline warranted in this event. (Differing Views of Performance)
- The mechanics and the supervisor did not follow the procedure for re-assembly of the power operated relief valve. (Procedure Adherence)
- Neither the basis for the initial decision to terminate the mechanics, nor management's rationale to reinstate them, was effectively communicated to the work groups, including first-line supervision. (Communication of Issues, Chilling Effect)

c. SCWE and Related Implications

Management took adverse action against two mechanics and a supervisor. Management, however, rescinded its decision with regard to the mechanics after the union grieved the decision, and without communicating the basis for its reversal. This potentially impacts SCWE because it could support a perception that management has taken inappropriate actions against its employees, which, in turn, could chill workers' willingness to raise issues or challenge management decisions. Management's actions and its failure to communicate the basis for these actions also has led to a perception among some of the workforce that it is unable or unwilling to hold bargaining unit personnel accountable for poor performance, or that it has lowered its standards and expectations for performance. Tension between bargaining unit personnel and supervisors is heightened, as a result of what is perceived as disparate standards applicable to these two groups. A similar situation in Operations (*i.e.*, attempted termination of a bargaining unit member and subsequent reinstatement) created considerable negative energy in that work environment.

11. 22 MS 42 Steam Leak (Salem Unit 2, September 2002)

a. Description

In September 2002, Salem Unit 2 valve 22 MS 42 developed a steam leak in the turbine building, which impinged on plant electrical equipment. Operations management and shift personnel assessed the situation and determined that it was unsafe to close the valve in order to isolate the leak and, for that reason, decided to shut down the unit. Contrary to this decision, and either without prior notification to, or clearly communicating his intentions to the shift Operations personnel, an Assistant Operations Manager (AOM) closed the valve and stopped the steam leak.

b. Observations/Perceptions

- Operators indicated that the AOM acted inappropriately by shutting the valve because he was not authorized to do so, and put himself at personal risk. (Management / Labor Interface, Non-Conservative Decision Making)
- Operators perceived the AOM's operation of equipment without their knowledge or permission as a challenge to Operation's command and control. (Inappropriate Decision Level)
- Some individuals, including the AOM, perceived his actions to have been appropriate, thereby demonstrating a difference of opinion regarding performance. (Differing Views of Performance)
- Operations personnel viewed the AOM's actions and, in particular, his failure to communicate his intentions, as contrary to safety and as violating the tenant of "practice what you preach." (Communication of Issues)
- Some operators considered the AOM's actions to be a misguided or heroic attempt to keep the unit on-line. Another AOM felt the AOM's actions sent the message they were going to keep the unit on-line. (Schedule and Production Issues)

c. SCWE and Related Implications

The AOM's actions communicated the message that management need not act in accordance with its own expectations regarding communications, conservative decision-making, and personnel safety.

12. Loss of Core Monitoring System (Hope Creek, 2002)

a. Description

Following a power uprate, and during full power operation, the core monitoring system (CMS) was lost. Because of the loss, a Nuclear Control Operator (NCO) felt that the power level could not be adequately monitored and recommended a power reduction until the CMS was returned to service or other more precise measuring equipment became available. The Control Room Supervisor (CRS) agreed with the NCO's recommendation, but the Shift Manager (SM) overruled the recommendation. The plant remained at full power.

b. Observations/Perceptions

- The NCO who recommended the power reduction felt the SM tried to get him to change his position on the issue. The NCO said that after he raised the issue some front-line supervisors stopped talking to him. (Management / Labor Interface, Chilling Effect, Inappropriate Behavior)
- The NCO felt that because they only had a gross estimate of the power level, a small power reduction was the proper course of action and, subsequently, wrote a Notification on non-conservative decision-making. Another NCO, through hearsay, understood that the unit had lost the CMS, but didn't reduce power as recommended by the NCO, which didn't seem a prudent course of action. He said the actions left other NCOs wondering why they didn't reduce power. Conversely, the SM said he understood that the power level was trending down before they lost the CMS, and that

they were below the licensed power level. Consequently, he didn't see the need to lower power. (Non-Conservative Decision-Making)

- The Assistant Operations Manager (AOM) concedes that it should have been the CRS's decision on whether to reduce power. (Inappropriate Decision Level)
- The NCO doesn't believe shift management took the appropriate action given the condition of the plant. (Differing Views of Performance)
- One NCO, not directly involved in the event, did not think that the SM's actions were prudent, suggesting that the SM's rationale for not reducing power was not effectively communicated and / or understood by operators. The NCO who wrote the Notification said it was closed out without anyone speaking to him. (Communication of Issues)
- The power reduction recommended by the NCO, based on his assessment of the condition of the plant, was endorsed by the CRS, but not acted on by higher management (*i.e.*, the SM). The SM opined that previous signals from management emphasizing production may have influenced his decision not to reduce power. He described those signals as hints of overriding pressure for production from former senior managers. (Schedule and Production Issues)
- In hindsight, the SM would do things differently because of the impact his directions had on the CRS and NCO. (Chilling Effect)

c. SCWE and Related Implications

The NCO's experience in this matter, wherein his recommendation was seemingly ignored and he felt snubbed by some supervisors after raising the issue, is not conducive to an environment where employees are encouraged to, and feel comfortable raising concerns. The cited lack of communication on the closure of the Notification calls into question the effectiveness of the site's feedback process, which is another impediment to the willingness of employees to raise concerns. This event may also have had a chilling effect on others who may have been involved in, or familiar with this event and the real or perceived treatment experienced by the NCO. In addition, the signal sent, either intentionally or unintentionally, in conjunction with this and other events, is that production or scheduling concerns are more important than conservative or prudent decision-making.

13. Reactor Head Vent Procedure Change (Salem Unit 1, Fall 2001)

a. Description

While restarting Salem Unit 1, the reactor head vents failed to stroke in the required amount of time. This was a surveillance requirement for mode progression, and, therefore, the failure prevented continued power ascension. In order to progress with the start-up, a senior member of site operations sought an on-the-spot procedure change that would have accepted the extended current stroke times; however, shift management would not change the procedure.

b. Observations/Perceptions

- One Control Room Supervisor (CRS) understood second-hand that senior site operations management requested the on-the-spot procedure change to allow the start-up to progress. A former Assistant Operations Manager (AOM) describes that

surveillance as a requirement for mode change, and because the vents wouldn't stroke in the correct period of time, they were preventing a mode change, so the senior member of site operations first sought to just move on, then to change the stroke time in the procedure to the time they had achieved. Another AOM said they had lost the closed indication on one valve when stroking it, and the senior member of site operations started asking questions about the requirement for limit switches and wanted the requirement changed via an on-the-spot procedure change, which he (the AOM) advised couldn't be done. The two AOMs involved in discussions with senior management indicated that the request for procedure changes was inappropriate, describing a situation with senior management interjecting itself into operational decision-making during the restart process. (Non-Conservative Decision-Making, Inappropriate Decision Level)

- One CRS heard second-hand that senior site operations management gave the Shift Manager (SM) a "hard time" when he refused to agree to the procedure changes. An AOM said that, in response to rejecting the request, senior site operations challenged the decision for fifteen to thirty minutes before the AOM made it clear that he wasn't going to make the change. (Decision Unduly Challenged, Inappropriate Behavior)
- According to an AOM, a senior member of site operations initially displayed a willingness to just move forward when they couldn't meet the surveillance requirements, and then tried to change a procedure to fit the current conditions to allow the plant to change modes. Another AOM corroborated the attempt to change the procedural requirements to fit the then current plant conditions. (Procedure Adherence)
- One AOM perceived the insistence on the on-the-spot change as an indication that management viewed getting the plant back on-line as more important than procedural adherence or doing the right thing. (Schedule and Production Issues)

c. SCWE and Related Implications

Two mid-level Operations managers viewed a senior member of site operations management to have inappropriately attempted to change a procedurally-governed surveillance requirement to fit existing plant conditions (*i.e.*, stroke time). The perception that a senior manager behaved inappropriately in response to a mid-level manager's decision not to change a surveillance procedure to accelerate the start-up is not conducive to the raising of concerns, particularly those related to procedural compliance. One mid-level Operations manager opined that the actions were driven by the need to get the plant back on-line (*i.e.*, production), versus doing the right thing. This is another event, although historical in nature, that challenges the site's expectations relative to performance standards and feeds the belief held by some that production and schedule considerations, at least at one point in time, took precedence over safety and conservative operational decision-making.

14. Lightning Strike and Run-Back (Hope Creek, 1999-2000)

a. Description

Hope Creek was at full power when lightning struck an off-site power line. An automatic "run-back" signal resulted in a power reduction. The operators stabilized the plant and returned it to full power. During the shift changeover, Operations staff discovered that the plant had lost

the feedwater heaters and exceeded the feedwater temperature limit. Later, the Chief Nuclear Officer (CNO) called a meeting and told the operators words to the effect, “you don’t have the authority to raise power on my unit.”

b. Observations/Perceptions

- The CNO considered the on-shift operators’ decision to return the plant to full power without consulting higher management inappropriate and non-conservative. (Non-Conservative Decision Making, Inappropriate Decision Level, Differing Views of Performance)
- The operators were not aware of management’s expectation to contact senior management before raising the plant’s power level. One Nuclear Control Operator (NCO) stated that the CNO’s position was that no shift manager had the ability to raise power without senior management involvement. To the NCO, the message appeared to be that some on-shift management teams were not as conservative as senior management expected them to be. One manager believes Operations became “disempowered,” with station management getting to the point where they couldn’t make any management decisions. He doesn’t believe, however, that there was ever any confusion over the operators’ ability to lower power to put the plant in a safe position. (Communication of Issues)
- An operator commented that, although he understood that they had made a mistake, he thought the CNO’s response and the outcome were overly harsh (i.e., the operators didn’t have the authority to raise power). (Inappropriate Behavior)

c. SCWE and Related Implications

Senior site management’s actions, either intentionally or unintentionally, may have created sufficient doubt in the operators’ minds that it affected their ability and / or willingness to exercise their legitimate license holder responsibilities. This may have created a void in the operational decision-making process that more senior site management filled and which invited subsequent charges of non-conservative and production-driven decision-making.

C. Collective SCWE Significance of Unresolved Conflicts

While none of the unresolved events involved reactor operations that put either the plant or public at risk, the collective SCWE significance of these events demonstrate that some in management, as well as some among the workforce: (1) place a greater emphasis on production and schedule considerations than conservative decision-making; (2) tolerate degraded equipment conditions and expect personnel to work around operational challenges presented by such conditions; and (3) tolerate procedural non-adherence. The events also demonstrate that some in management: (1) do not clearly communicate standards or the rationale behind their decisions, or provide feedback to those raising issues; (2) have taken actions, or failed to take actions, that have had a chilling effect on the willingness of certain employees to raise concerns; and (3) become involved in decisions more appropriately the responsibility of Operations.

Management is addressing and making progress in overcoming many of these perceptions, but has not yet regained the trust and confidence of Operations. For example, management is in the process of ensuring that the responsibility and decision-making authority remains within Operations, but needs to further clarify expectations as to these misperceptions,

and then act over an extended period of time consistent with those expectations. This effort is made more difficult by some in the workforce who have not accepted the necessary standards and requirements for strict adherence to procedures. In some cases, mixed messages from management's actions with respect to procedural adherence compound the difficulty.

D. The Impact of the Corporate / Site Interface on the Work Environment

The Team next considered the impact, if any, of the corporate / site interface on the work environment for raising and resolving concerns. PSEG's earlier SCWE assessments did not identify this interface as an issue impacting SCWE. The Team asked as part of its standard questions whether those interviewed had any SCWE issues involving the site / corporate interface, including management's commitment to safety or expenditures of funds and commitment of resources. In response to these questions, working-level personnel and mid-level site management did not identify a direct SCWE issue in that the vast majority of both groups indicated that the corporate interface neither impacted workers' willingness to raise issues, nor site management's perceived or actual ability to address issues. Nonetheless, some working-level personnel and mid-level site managers assumed a negative impact from the corporate / site interface in two respects. First, some assumed that site management is not fixing longstanding equipment issues because corporate is not providing the necessary funds. Others, including some of whom were involved in the unresolved conflicts, assumed that site management's conduct in the course of those events resulted from a perceived pressure from corporate to place a greater emphasis on production and scheduling considerations than conservative decision-making. Because the interviews disclosed that this group of working-level personnel and mid-level managers had no direct knowledge of any such pressure, the Team next interviewed all nuclear officers, certain other senior nuclear management, and their principal corporate contacts to determine if, at the executive level, there exists a perception that corporate impacts the site work environment for raising and resolving concerns.

The Team did not elicit information during the executive-level interviews to suggest that corporate directly and negatively impacts the site environment for raising and resolving concerns. Nonetheless, the Team did identify a number of corporate practices and policies which have the potential to negatively impact the site SCWE and have been interpreted by some personnel at the site to suggest that an emphasis in production over conservative decision-making is desired by corporate management.

Corporate policies, practices, business planning, and compensation may have had the unintended consequence of having site management focus on production and schedule, at times, over conservative decision-making. Corporate policies and practices may have similarly had an unintended consequence of leaving longstanding equipment issues unresolved. Specifically, and apart from SCWE, both site and corporate management did express some frustration with respect to the lack of clarity as to their respective roles and responsibilities relative to some support functions. The areas involve such support services as Human Resources, Labor Relations, Budget, and Financial Planning. While the level of uncertainty and frustration is clearly less than what existed under the prior nuclear management team, there remains a lingering issue. Although not directly related to SCWE, uncertainty and inconsistency in implementation of HR, Labor Relations, and budgetary policies and practices erodes employee and site management confidence in corporate and may indirectly impact a healthy work environment.

1. HR Support and Labor Relations

HR support and administration of Labor Relations has been a source of frustration for site management for a variety of reasons. Senior site management generally considers HR and Labor Relations practices to be poorly documented, not consistently followed, and, at times, non-existent. As set forth in the previous section addressing unresolved conflicts, some of those issues remain unresolved because of unintended or mixed messages involving PSEG's administration of HR and Labor Relations policies and practices. At times, senior site management has felt their corporate counterparts did not support them in their efforts to hold workers accountable for deficient performance. Corporate, in turn, has perceived nuclear management as not adhering to established HR or Labor Relations practices in its attempt to heighten site performance. Compounding those events has been poor communications from management to affected workers in explaining the basis for either taking or not taking personnel action.

Contributing to this frustration and apparent lack of direction are the frequent management changes relative to strategically important positions. The many management changes at the site have resulted in divergent views among management based upon experiences under different HR and Labor Relations programs at different utilities. The net effect is that many within site management do not understand basic PSEG HR and Labor Relations programs, and the respective roles and responsibilities among line management and corporate support groups implementing these programs. For its part, corporate is not providing clear, consistent direction. For example, in 2002, site management completed salary planning for site personnel and, according to site management, were within the budget provided by corporate. Salary adjustments were then approved by the nuclear officers, including the CNO. Subsequently, corporate HR made certain adjustments without coordination with the site. This further strained and confused the relationship between HR and the site.

The organizational structure and reporting responsibility for HR / Labor Relations support to the site has changed several times over the years, and has been also cited as a source of frustration. For example, the HR function was "imbedded" in the nuclear organization from the 1980s to the mid-1990s, at which time all HR was realigned under corporate HR. This reorganization resulted in a reduction from 75 to 25 employees in site HR. Three years later, HR was again imbedded within nuclear. In March 2004, PSEG once again realigned the HR function to report directly to HR corporate. These realignments have changed and confused the way site management has had to accomplish its human resource functions.

2. Financial Planning

In the financial planning area, rules and roles have been similarly confused. First, capital projects are typically recommended by the PSEG Nuclear group at the site. PSEG Nuclear recommends these projects to PSEG Power for its review and approval. Prior to PSEG Power approval, corporate financial planners reporting within PSEG Power review the projects from a cost and budget perspective. Their job is not to second-guess the project, but to understand its financial impact on PSEG. The projects are also reviewed by the PSEG Capital Review Board (a senior group consisting of the heads of PSEG's various subsidiaries and chaired by the PSEG Chief Financial Officer). The Capital Review Board (CRB) reviews the proposed project from a long-term planning perspective and to assure consistency with PSEG's Business Plan (a rolling five-year plan of action). The PSEG Power Board of Directors (an internal board of directors

with no outside members and generally consisting of the same individuals who sit on the CRB) must also approve capital projects.

Our interviews revealed that those involved tended to act as if they did not have a full appreciation of the role played by others in the financial planning process. For example, from the corporate financial planner's perspective, nuclear managers tend to act as if once they have a conceptual agreement with PSEG Power management, any financial planning justification is an inappropriate second-guessing. These same financial planners perceive the nuclear group to be consistently underestimating the scope and cost of proposed projects, and then coming back to seek increases. The corporate financial planners have consistently provided higher estimates on nuclear projects, which they indicate have been consistently more accurate. Although most in nuclear would concede these points, they explain the process is not well documented or understood, and requires supporting information too early in the planning process. As a result, nuclear is put in a position of having to update and modify estimates as planning continues, which creates a perception nuclear is not well prepared.

Perhaps most important for this review, no one, either at the site or at corporate, can recall any proposed safety-related project being denied or, once approved, a proposed increase being denied. The tension surrounds the timing and quality of the information supporting the financial aspects of a safety-related project, not the necessity to undertake the projects in the first instance.

An example of this frustration is reflected in a June 2003 CRB meeting. During this meeting, the nuclear group presented revised estimates for a project previously approved in December 2002. The estimate was a marked increase from that provided in December 2002, and the CRB asked a number of pointed questions as to assumed labor rates, schedule, scope, etc. Although participants acknowledged that the CRB's points had validity, some questioned the way in which they were delivered as being unprofessional. As a result, some within the nuclear group took CRB's challenge as a lack of support; however, ultimately the CRB funded the requested increases. Again, no one identified any example where funding for safety-related projects was not approved. It appears to the Team that the corporation (PSEG) has provided adequate funding in both the O&M and Capital budget areas.

The cumulative effect of these interface issues is to further confuse and frustrate site management, and to further limit the available time to create sustainable change and progress. Both the site and corporate planners are hopeful that the recent efforts to clarify and align corporate policies and processes between the support functions and the site will result in better corporate / site relations in this area.

3. Business Planning and Compensation

Business plans have sought to address "Safety, Reliability, and Cost through People." In establishing these plans, it was communicated to senior nuclear leadership, through the five-year planning process, that the corporation planned for increased nuclear generation while controlling capital and operating and maintenance spending. Production elements in the business plans provided for shorter outages and reduced staffing to accomplish these objectives. Site management communicated these targets to site personnel on a quarterly basis, and incentive compensation was reflective of these plans.

The factors used for business planning and incentive compensation appear to be typical for nuclear operations, and included safety elements. In accordance with corporate policy generally, once financial goals were set for a year, they were not changed, even when additional work or outage time may have been required, and managers were held accountable for managing within the original budget. In some cases, achieving these objectives became increasingly difficult with the equipment challenges and work management practices at the site. This was interpreted by certain site personnel to be a message from corporate that nuclear output was a priority, without appropriate consideration for conservative decision-making. Finally, some in management also believe the executive compensation incentives—providing bonus incentives tied to such production-oriented goals as revenue, nuclear capacity factor, outage duration, and under-running the capital and / or O&M budget—do not properly balance production considerations with other factors that provide an incentive for conservative decision-making. While the Team considers such factors appropriate elements in an overall compensation scheme, corporate needs to review the entire scheme to assure desired behavior is being appropriately rewarded.

E. Employee Willingness to Raise Concerns

The first of the four criteria of a healthy SCWE is that employees feel free to bring forward safety concerns without fear or retaliation. For its part, management must develop and communicate appropriate SCWE expectations, act consistently with these expectations and in a manner that encourages the free flow of safety information, and provide effective training on these expectations. The primary indicators of this SCWE element demonstrates that personnel will raise nuclear safety concerns. Some individuals did express some hesitancy in raising issues for fear of retaliation, while others expressed similar hesitancy because of issues having been raised yet not resolved, the lingering effects from the unresolved issues cited in this report, or an ineffective corrective action program.

1. Employee Perceptions

a. Survey Results

Several recent surveys have confirmed that PSEG employees are willing to raise safety concerns. PSEG conducts quarterly SCWE surveys of the site population. Each survey includes five questions regarding worker willingness to raise safety concerns. The results of the most recent survey (third quarter, 2003) and the average results of the most recent four quarters, demonstrate some strength in this area. In addition, three out of five questions show a positive trend.

PSEG SCWE Survey Question	Most Recent Q	Four Q Rolling Ave.
	(percent positive responses)	
● I am responsible for identifying problems and adverse conditions	98%	99%
● I believe a culture exists at PSEG conducive to raising safety concerns	93%	91%
● I believe that I could challenge a non-conservative decision of my management	86%	87%
● I feel free to approach management regarding any nuclear safety or quality concern	94%	92%
● I believe I can raise any nuclear safety or quality concern without fear of retaliation	91%	87%

The Synergy Survey obtained consistent results to those obtained in the PSEG survey. For example, 99.2 percent of the survey respondents indicated that they would inform their supervisor if they identified a potential nuclear safety issue or concern. A similar number (97.6 percent) indicated that PSEG genuinely encourages its employees to identify potential nuclear safety concerns or issues, and 96.5 percent stated that their immediate supervisor receives raising potential nuclear safety concerns or issues favorably.

With regard to management’s actions taken to encourage workers to raise concerns, the PSEG survey found less positive, but somewhat improving results.

PSEG SCWE Survey Question	Most Recent Q (percent positive responses)	Four Q Rolling Ave.
● Management’s expectations regarding safety and quality are clearly communicated	90%	88%
● I believe management wants employees to report concerns	88%	87%
● My management takes corrective actions on employee concerns brought to them	84%	83%

b. Employee Feedback From Team Interviews

Employee feedback during the Team interviews was consistent with the PSEG and Synergy Survey results with regard to employees’ willingness to identify and report nuclear safety and quality issues. Personnel acknowledged that, as nuclear workers, they felt an obligation to report such issues, and they indicated that they did so. At a site with a strong SCWE, employees generally are willing to report concerns that are less significant than those involving nuclear safety. However, many Salem and Hope Creek workers stated that they were not as willing to report more routine or obvious concerns to their supervision, the CAP, or the ECP. The reasons for this reluctance varied. The most frequent reason given was frustration with repetitive problems, or longstanding equipment issues without effective resolution. In other words, workers are willing to raise issues but they see some not being corrected in a timely or effective manner, and this leaves them less inclined to raise issues that are not clearly tied to safety. Adding to this frustration appears to be a lack of feedback from management on the status of its review, corrective actions, and / or the basis for why more timely action is not being taken. Some workers, principally among Engineering and the bargaining unit in Operations, indicated that they are reluctant to raise or pursue a concern—but not an obvious nuclear safety concern—for fear of retaliation.

The existence of longstanding recurring problems has led, or at least added, to an employee perception that management, in general, does not wish to hear concerns. Most employees indicated that their direct supervision encourages them to raise significant issues and would attempt to address them in a timely manner, but some were less encouraging of, and responsive to, employees who raise issues perceived to be less important or issues identified in the past but which are not yet corrected. Similarly, some employees stated that historically they have had concerns that management above their first-level supervisor would not pursue issues that do not rise to the level of a nuclear safety concern if doing so would negatively impact production. Some of these same people provide a basis for their views to be one or more of the unresolved conflicts set forth in Section V.B.

Some interviewed cited “negative peer pressure” for not identifying issues with an HR / Labor Relations component. Others indicated another reason not to raise an issue is it may be returned to the initiator for resolution and thus increase their workload. In that sense, some felt they were penalized for self-reporting. Finally, some did not consider the ECP as a viable alternative to raising a concern because they perceived ECP as ineffective or not sufficiently confidential or independent from management.

A majority of employees interviewed had an insufficient appreciation of SCWE and its formal elements. Most understood that they were responsible for raising nuclear safety concerns, and other significant safety issues, but could not point to any specific management communications or training expressing management’s expectation. Many were also not aware of any management statements or communications discussing PSEG’s expectations that encourage workers to raise concerns, provide multiple mechanisms for employees to do so, or prohibit harassment or retaliation. Most understood, however, that they had the right to speak to the NRC.

The Team found that there was an inconsistent level of understanding among management personnel, including senior management, of SCWE concepts and of management behaviors that further or impede a SCWE. Further, the Team, as well as the USA Assessment, found that PSEG management has not set forth and promoted a clear SCWE message, nor, with the notable exception of senior managers who have joined PSEG in 2003, been sufficiently visible to the workforce, whether in the field observing work, or participating in other activities permitting direct communication with the workforce. Such interaction permits employees the opportunity to observe positive management behaviors, to promote an “open-door” atmosphere, and to discuss standards and expectations.

The Team considered possible contributing factors to these perceptions on the part of the workforce. Among the apparent contributing factors are:

- PSEG has not set forth and then trained personnel in SCWE expectations and, therefore, they are not well or uniformly understood.
- Ineffective implementation of the CAP and work management process, as well as a general lack of productivity, has eroded worker confidence in management, and PSEG’s programs for identifying and resolving issues.
- The relative roles and responsibilities of personnel at various levels within PSEG are unclear, as reflected, in part, in: (1) the unresolved events; (2) management turnover; and (3) a lack of management / supervisory presence in the field.
- Ineffective communication of the rationale for actions to those impacted by such decisions.

2. Use of Corrective Action Program

Trending of the use of the CAP is evidence that the workforce is willing to raise issues to management. The number of Notifications initiated at Salem and Hope Creek is on an upward trend, having increased sixteen percent from 16,935 in 2002 to 20,151 in 2003. This trend has continued into 2004, with 1,837 Notifications initiated in January 2004, which is an increase of sixteen percent over the 1,538 initiated in January 2003. Similarly, site personnel initiated 1,590 Notifications in February 2004, which is a twenty-eight percent increase over the 1,144 initiated

in February 2003. Thus, it appears that employees are continuing to raise issues through the CAP, even given the reservations expressed during the Team's interviews. The CAP is further addressed in Section V.F., "Effectiveness of the Normal Processes For Resolving Concerns (the Corrective Action Process)."

3. Management SCWE Expectations

a. SCWE Policy Statement

Both USA and this Team found that PSEG had not issued a clear SCWE policy and then appropriately promoted that policy using a multi-media communications campaign. Senior management expectations regarding SCWE should be clearly communicated to all site personnel and periodically reinforced in a variety of ways. Initially, such expectations should be documented in a company-wide SCWE policy. At the initiation of this review, PSEG's policies and expectations as to SCWE were not contained in a single, clear policy but could be found in several documents, some of which were out of date in that they were signed by former executives or did not reflect current practice.

PSEG has now issued a clear SCWE policy, which became effective March 15, 2004. This policy reflects industry best practices, and effectively captures all of the appropriate SCWE expectations and requirements regarding such areas as employee rights and responsibilities, creating and maintaining a SCWE, mechanisms available to site personnel to raise nuclear safety and quality issues, and PSEG's intolerance of retaliation in any manner for raising such issues.

SCWE-related expectations are also scattered among a number of site policies, procedures and processes at Salem and Hope Creek. The SCWE-related information in these materials is not incorrect or inappropriate. However, it does not address the entirety of the roles, responsibilities, and expectations of site personnel regarding the creation and maintenance of a SCWE, and, as such, it does not, and cannot replace an overarching SCWE policy.

b. Promoting Management SCWE Expectations

At sites exhibiting strong SCWEs, all levels of management routinely promote and reinforce SCWE messages and information to the site population. These communications take many forms and provide a range of messages. The frequency of the messages is an important factor in workers' perception of the sincerity of management expectations. Prior to the NRC's January 28, 2004 letter, the Team found few site-wide communications related to SCWE. For example, we found only three site-wide SCWE communications from senior management from 1994 to issuance of the NRC's January 28th letter. There was a similar lack of SCWE-related communications upon a review of the other forums used by management to communicate to the workforce, including the daily site newsletter "Outlook," and minutes from "4Cs" Meetings.

Since the issuance of the NRC's January 28th letter, PSEG management has increased the number and quality of communications related to SCWE with the Salem and Hope Creek site. For example, PSEG made the NRC's letter available to the entire site population by posting it on the PSEG Nuclear intranet. Two days after the letter was issued, PSEG Nuclear Chief Nuclear Officer, Roy Anderson, discussed his views of SCWE with the Salem and Hope Creek workforce in a letter distributed site-wide. An in-depth discussion of the NRC's letter, the actions PSEG was taking in response to the letter, and general SCWE expectations and responsibilities, was provided to the entire site on February 5, 2004, during all-hands meetings. Significantly, this briefing was conducted by senior PSEG site management, namely Senior Vice President,

Christopher Bakken and Vice President, Nuclear Assessments, John Carlin. Those interviewed indicated that this format is effective in reinforcing management's SCWE message.

To be effective, management communications must be timely and exhibit strong SCWE principles. As discussed, PSEG management has provided timely information regarding the actions being taken in response to the NRC's January 28th letter. However, management has not yet released findings arising out of the Synergy Survey or provided an explanation for the delay. The Synergy Survey was a significant and visible event at Salem and Hope Creek over the last few months, with over two thirds of the site population participating. Management should have provided results to the workforce on a more timely basis.

PSEG Nuclear has also taken action to heighten the awareness of SCWE by the site population by creating a dedicated "SCWE Page" for the PSEG Nuclear intranet. This web page is prominently featured on the PSEG Nuclear home page and provides useful information for the workforce. Although the page's content is somewhat sparse at this time, increasing its substantive content, and promoting it effectively on site, could significantly increase the site population's understanding of, and sensitivity to SCWE. All of these initiatives contribute to promoting and reinforcing a clear SCWE message.

4. SCWE Training

To ensure that all site personnel have a clear understanding of SCWE principles, management expectations, and their duties and responsibilities, all employees, including contractors, should receive SCWE training. This training should address mechanisms for raising concerns, the importance management and the NRC places on the identification and communication of concerns, intolerance of any form of retaliation, and techniques to enhance the free flow of safety information.

PSEG's SCWE training is included in the General Employee Training (GET), specifically in the portion of the training addressing Quality Assurance. There is no separate SCWE training provided to non-supervisory personnel at Salem and Hope Creek on a regular basis. The SCWE information contained in GET consists of a paragraph describing the ECP, and a discussion of employee rights and responsibilities as presented on "NRC Form 3." The SCWE-related information does not touch on many of the areas noted above, is not up-to-date, nor user friendly. It also does not effectively discuss or promote PSEG SCWE expectations or best practices.

The ECP Manager has also developed a one-hour SCWE training module which he provides to specific work groups or organizations that he, or others in management, believe would benefit from such training. To date, this training has been provided to Operations, Security, Engineering, Chemistry, Radiation Protection, and Maintenance. The training is provided to both employees and supervision and consists of SCWE expectations, elements of retaliation, and the importance of improving the supervisory / worker relationship. Providing focused training for work groups or organizations that demonstrate SCWE-related issues is a positive action. However, the training materials used by PSEG for this purpose should be revised to place a greater emphasis on the supervisor / worker relationship, civil treatment, and PSEG SCWE expectations.

The current SCWE-related training at Salem and Hope Creek provided to all personnel has not been effective at providing workers with a working knowledge of SCWE principles. As

mentioned above, although survey results show that the vast majority of personnel feel free to raise nuclear safety concerns to their supervision, many of those interviewed during the course of the Assessment did not understand the phrase “safety conscious work environment” or management’s and NRC’s SCWE expectations. Indeed, most associated the term SCWE with personnel or industrial safety, rather than the free flow of information among the organization relative to nuclear safety concerns.

5. Incentive Programs

Incentive programs provide a highly visible method for demonstrating management’s commitment to a SCWE by rewarding ideas not based solely on their cost savings but also on their contribution to safety. A program exists at the Salem and Hope Creek site to recognize instances in which employees identify situations in which safety could have been compromised if left uncorrected. Based on articles published in the site’s daily newsletter, this program, referred to as the “Good Catch” program, is used, or at least publicized, infrequently (*i.e.*, approximately quarterly). Such sporadic use is not sufficient to send the message that all safety and quality concerns are encouraged, even where such concerns could or will have a negative impact on costs. Further, the “Good Catch” program does not appear to provide any reward, other than public recognition, to the employee. Finally, there is no equivalent program targeted to the group or department level.

F. Effectiveness Of The Normal Processes For Resolving Concerns (The Corrective Action Process)

The second criteria of a healthy SCWE is that the normal processes for resolving concerns is understood by the workforce, user friendly, well used, has a sufficiently low threshold to capture the majority of concerns, effectively prioritizes and resolves concerns, provides feedback to the initiator, and ensures the development and completion of appropriate corrective actions. The primary indicators of this SCWE attribute demonstrate that, while management has been receptive to issues perceived to be significant or involving a nuclear safety issue, management has been less receptive and ineffective in addressing other employee concerns, particularly longstanding equipment problems, principally due to ineffective implementation of the corrective action program and work management practices.

1. Employee Perceptions

a. Survey Results

PSEG’s quarterly SCWE surveys of the site population includes six questions on employee perceptions of the effectiveness of the CAP. Based on the Team’s collective experience, a strong CAP should elicit positive response rates at or above ninety percent, while a marginally acceptable CAP would elicit positive responses at or above eighty percent. The results of the most recent survey (third quarter, 2003) and the average results of the most recent four quarters, demonstrate weakness in this area although the third quarter results suggest a positive trend. Most workers indicate that they understand the CAP and know how to initiate concerns. This is consistent with the increased numbers of CRs being initiated by the workforce. However, a significant minority of the workforce does not perceive the CAP as being effective at identifying, resolving, or prioritizing issues.

PSEG SCWE Survey Question	Most Recent Q	Four Q Rolling Ave.
	(percent positive responses)	
● Resolution of potential nuclear safety/quality issues including root cause and broader implications through the CAP is effective	81%	75%
● Identification of potential nuclear safety/quality issues through the CAP is effective.	84%	80%
● I feel free to raise nuclear safety/quality issues through CAP without fear of reprisal	90%	88%
● I am confident that issues reported through CAP are prioritized appropriately, thoroughly investigated, and resolved in a timely manner	73%	69%
● CAP is utilized effectively at Salem/Hope Creek to resolve conditions adverse to quality in a timely manner.	70%	67%
● I know how to write a notification and get it into the system.	95%	95%

Similar weaknesses were found by the Synergy Survey as shown in the following table.

Synergy Survey Question	Mean	% negative responses
● I am confident that the CAP will ensure that potential nuclear safety problems are addressed in a timely manner	2.95	31%
● I am confident that the CAP will ensure that potential nuclear safety problems are resolved in an effective manner.	2.97	29%
● I am confident that the CAP will ensure that potential nuclear safety problems are investigated sufficiently to define corrective actions that address the root cause.	3.15	22%
● I am confident that the CAP will ensure that potential nuclear safety problems are prioritized appropriately.	3.26	20%

The USA Assessment similarly found that “[t]he Correction Action Program has not [sic] been ineffective in improving station performance due to a reluctance to document issues, a lack of persistence in identifying problems, or eroded confidence in the process to resolve issues.”

b. Employee Feedback From Team Interviews

Team interviews confirmed a significant number of PSEG employees lack confidence in the effectiveness of management in resolving issues raised by the workforce. The reasons for this lack of confidence vary among the workers but the more typical reasons provided are:

- Management’s inability or unwillingness to resolve longstanding equipment issues and tolerance of degraded equipment.
- Ineffectiveness of Maintenance in not addressing the backlog of corrective maintenance and preventative maintenance.
- Failure to adhere to Work Management or CAP requirements.
- A focus on schedule and production.
- Frequent supervisor and management turnover.
- Failure of management to hold workers accountable for poor performance.
- Low worker productivity.

- Ineffective change-management process.
- Ineffective communications regarding actions taken to resolve issues, and a lack of feedback.

2. CAP Performance Indicators

As part of the Assessment, the Team evaluated the PIs in regards to the effectiveness of the CAP. The Team specifically reviewed the effectiveness of the CAP as measured by such indicators as: unscheduled entries into Limiting Conditions for Operations (LCO), percentage of rework, overdue actions, repeat issues, self-identification ratio, requests for extensions, average time to investigate, and the feedback process to employees who raise concerns. The Team also reviewed improvements, trends, and ongoing plans to enhance the corrective action plan. PSEG's performance indicators reflect the following:

- Unplanned Entries into Shutdown LCOs: There is a PI for unplanned entries into shutdown LCO. The PI indicates there were forty-eight unplanned entries in 2003 at Hope Creek and forty-six at the Salem units. That number is indicative of a less-than-effective corrective action process for resolving equipment problems.
- Percentage of Rework: There is an indicator for repeat work (equipment returned to service after maintenance). The historical data for 2003 is 2.8 percent for repeat work for all three units. The percentage is 2.6 percent for January 2004, and for February, the site average was one percent. It appears that, at present, there is no PI for rework (equipment turned over for PMT where it failed and was returned to maintenance for more work). There is limited data available as a PI for repeat work to come to a conclusion on the impact of the corrective action process on the station's ability to perform corrective maintenance.
- Number of Extensions: This is a new PI (four months of data), so therefore there is limited data to analyze.
- Self-Identification: The CAP owner maintains this indicator. The goal is that 80 percent of the NUCRs issued are self-identified. As of February, the rolling twelve-month average for this PI is seventy-six percent. There has been difficulty in inputting the codes for tracking NUCRs for this PI. Therefore, this PI is not providing an accurate picture of self-identification.
- Average Evaluation Completion Time: The CAP owner maintains this indicator. The goal for completing evaluations is thirty days based on a rolling twelve-month average. As of February 2004, the rolling average age for completing evaluations was twenty-eight days. A review of historical data indicates the average age has been twenty-six to twenty-eight days.
- NUCR Average Age: The CAP owner maintains this indicator. The goal for the rolling twelve-month average age for a NUCR is 120 days. As of February 2004, the average age of a NUCR is 135 days. This PI, however, is not an accurate indicator of the actual average age of a NUCR. The reason for this discrepancy is that proposed corrective actions can be closed to other processes (PM, corrective maintenance, design change process, surveillance testing, and EQ) and a verification operation added to the NUCR to verify completion of the action in the other process. The

indicator nonetheless counts NUCRs as closed when the corrective actions are closed to other processes, even though there remains verifications of the corrective actions. Based on how this PI is measured, the Team believes that the average age of completing the corrective actions is greater than 135 days.

- Corrective Action Closure Quality: The Corrective Action Closure Board (CACB) commenced reviewing the quality of corrective action closures on March 1, 2004. The CACB will generate a monthly Performance Indicator to identify the percentage of closures reviewed by CACB that were acceptable. As of March 23, 2004, CACB had reviewed approximately 500 closures of corrective actions to determine quality. This review identified approximately eighty percent of NUCRs were closed with sufficient quality, while twenty percent were unacceptable and reopened to correct the deficiencies noted during the CACB review. Most of the inadequate closures (fifteen percent) were a result of either not completing the corrective action or not adequately resolving the problem.
- Root Cause Quality: This PI is based on a pass/fail determined by the Corrective Action Review Board (CARB). In February, the CARB reviewed four root causes with three passing and one failing. The goal for passing is ninety-five percent. Based on one in four failing in February, the quality of root causes was seventy-five percent. To date, PSEG has developed insufficient data to determine any trend.

As to improvements, trends, and ongoing plans to enhance the CAP, the overall performance has not improved since 2002. The corrective actions developed for the 2002 root cause (70027584) have not been effective because of several reasons. Organization and staffing changes appear to have contributed to an overall lack of focus on improving corrective action program performance. Some examples include:

- CAP (includes operating experience and self assessment responsibilities) staff was reduced in the past four years from fifteen people to four.
- The organizational structure and reporting alignment for the CAP have changed five times in four years.

There have been actions to improve the overall quality of Apparent Cause Evaluations (ACE). These efforts include more definitive guidance on how to perform an ACE, ACE training, and the development and use of an ACE qualification card. These efforts have improved the overall performance of ACEs. However, there is still room for improving the ACE process.

The Level 2 Business Plan is under review for revision to include actions to improve the overall performance in the corrective action process. This Level 2 Business Plan should capture not only actions to address the root and contributing causes in the 2002 Root Cause (70027584), but also any enhancements to the corrective action process deemed appropriate by the Level 2 Business Plan team.

3. CAP Effectiveness

Based on a review of PIs and an independent assessment of the CAP, the Team concludes that the CAP has been ineffective in improving overall plant performance.

In most cases there was limited data available for a PI to assess the effectiveness of the corrective action process. For example, the PI for the average age of a NUCR is not reliable because NUCRs are considered closed even though there are corrective actions still open but captured in other processes. Therefore, the average age of NUCRs is probably higher than the present indicator of 135 days (the goal is 120 days). This PI is not currently a useful tool for management to assess performance in the corrective action process. CACB has reviewed approximately 500 corrective action closures and this review indicates a need for improvement in the quality of corrective actions. This has been a known problem since a 2002 root cause on ineffective corrective actions. The CACB should improve performance in this area by changing behaviors and re-enforcing standards.

The review of the current Level 2 Business Plan for improving the corrective action process has identified actions planned for improving performance. However, this Level 2 Business Plan is being re-evaluated to include other actions needed to address weaknesses identified in the independent assessment of the corrective action process. The Level 2 Business Plan for improving the corrective action process is expected to be revised further if other actions are deemed needed to improve corrective action process improvements.

G. Effectiveness of the ECP

The third criteria for a healthy SCWE is that there exists an alternate mechanism, such as an ECP, available for personnel to raise concerns and it is effective. The primary alternative process at PSEG for raising concerns is the ECP. Well performing nuclear sites have ECPs that exhibit all of the following characteristics: (1) an organizational structure that provides actual and perceived independence from line management; (2) a formal procedure identifying the ECP's responsibilities and how they are to be carried out, and the resources necessary to meet these responsibilities; (3) investigations that are, and are perceived by the workforce to be, thorough and impartial, and which are conducted by qualified, trained, and effective investigators; (4) complete, clearly written, and fully auditable investigation reports and files; (5) adherence to confidentiality practices when confidentiality is requested; (6) solicitation of customer feedback; (7) effective promotional activities; (8) creation, collection, and monitoring of ECP and site SCWE performance indicators.

The primary indicators of this SCWE element demonstrate that, although the ECP has the requisite elements of an acceptable program, it could be enhanced. As implemented, the ECP has been ineffective in that a significant fraction of site personnel (fifteen to twenty percent) do not view it as a viable alternative to raise concerns, and the program did not identify to management with sufficient clarity the SCWE issues reflected in the findings of this report, the Synergy Survey, and the USA Assessment.

1. Employee Perceptions

a. Survey Results

PSEG's quarterly SCWE surveys include five questions on the effectiveness of the ECP. Based on the Team's collective experience, a strong ECP should elicit positive response rates at or above ninety percent, while a marginally acceptable ECP would elicit positive responses at or above eighty-five percent. The results of the most recent PSEG SCWE survey (third quarter, 2003) and the average results of the most recent four quarters, demonstrate marginal performance in this area, although the third quarter results show a slight positive trend. Ninety-

seven percent of all survey respondents report familiarity with the ECP; however, an unacceptably high minority lack confidence in the ECP.

<u>PSEG SCWE Survey Question</u>	Most Recent Q	Four Q Rolling Ave.
	(percent positive responses)	
● I am familiar with the ECP	97%	97%
● I am confident that issues reported to the ECP are thoroughly investigated and appropriately resolved.	88%	87%
● I believe upper management supports the ECP	86%	84%
● I can use the ECP without fear of reprisal.	85%	85%
● I believe that the ECP will maintain confidentiality of my concern at my request.	86%	84%

As shown in the following table, the results of the Synergy Survey reported findings very similar to the PSEG SCWE survey findings.

<u>Synergy Survey Question</u>	Mean	% negative responses
● I am confident that issues reported to the ECP will be appropriately resolved	3.26	22%
● Overall, my confidence in the ECP is ___ today.	3.27	21%
● I believe that our ECP is generally viewed as an acceptable method to identify potential nuclear safety issues or concerns.	3.28	22%
● I believe that our ECP has a high degree of management support.	3.36	18%
● I am confident that issues or concerns reported through the ECP will be treated in a manner that maintains confidentiality to the extent practicable.	3.44	19%
● I am confident that issues or concerns reported through the ECP will be thoroughly investigated.	3.48	15%
● I believe that our ECP is sufficiently visible and known to the workforce.	3.48	15%

b. Employee Feedback to Assessment Team

A significant minority of employees interviewed by the Team did not immediately name the ECP as the alternative to raising a concern up the chain of command. Further, many employees lacked a good understanding of how the program works, its role in the organization, and the scope of its responsibility. A few employees confuse ECP with the Employee Assistance Program.

Some employees expressed distrust of the ECP, and did not view it as an effective mechanism for resolving concerns. The reasons for this distrust varied, and was based on their own, or others experience with the ECP, or, in many cases, workplace rumor. Some questioned whether the ECP can or will keep their identities confidential. Although this is not unusual, it appears that this perception is based upon their recollection of historical examples (generally occurring several years ago) where they believe ECP failed to maintain confidentiality. Others did not believe that the ECP was sufficiently independent from line management. Although they expressed a general trust of the current ECP Manager, some employees believed that line management had the capability to influence ECP investigation findings. Additional perceptions

that contributed to a negative view included: the timeliness of ECP responses, ECP referrals to management for resolution, inadequate resources, and the reporting chain of command for ECP.

2. ECP Organization and Administration

a. Reporting Chain and Independence

ECP should be perceived by the workforce as independent from line management. The ECP Manager should have a functional reporting relationship directly to a senior site officer, and have unimpeded access to him or her. The ECP should conduct its own investigations, or, if non-ECP resources are used to investigate, those individuals should come from organizations having no involvement or relationship to the underlying issue or CI.

As reported above, some in the workforce do not perceive the ECP to be sufficiently independent of line management. A review of the ECP practices and reporting structure suggest reasons for this view. First, until very recently, the ECP Manager was a direct report to the PSEG Nuclear Finance Director. The reason for this reporting structure was not apparent. This reporting structure has been changed, with the ECP Manager now reporting to the PSEG Nuclear Vice President, Nuclear Assessments, who reports to the CNO. This change should help to alter employee perceptions on the level of management support for the program and its independence.

Second, because the ECP is a “one-man shop,” the ECP Manager routinely augments his investigation capability with line management. While this is not inherently improper, doing so has contributed to the perception that line management has the ability to, and does, bias investigation findings in favor of the company. To alter this perception, the ECP Manager should limit this practice. In addition, the ECP must ensure that the persons used are independent from the underlying issue or organization.

Finally, in the same vein, the ECP Manager routinely briefs line management on the results of investigations. Although the investigation is complete at the time of the briefings, a final written report may not yet have been prepared. The actual and perceived independence of the ECP will be enhanced by briefing the CI at approximately the same time ECP briefs management.

b. ECP Procedure and Scope of Responsibility

The majority of ECP’s responsibilities should conform with an ECP procedure. The procedure should provide clear and specific guidance on: (1) roles and responsibilities; (2) process for raising and investigating concerns; (3) documentation and record keeping; (4) confidentiality; and (5) internal and external evaluation of program effectiveness. The PSEG Nuclear ECP is governed by Procedure NC.NA-AP.ZZ-0078(Z) - Rev 4, March 14, 2003. The procedure adequately addresses each of these areas, with the exception of documentation and record keeping.

The tasks for which the ECP Manager is responsible are identified in the ECP Procedure. These core responsibilities are reasonable and appropriate. The ECP Manager has also been assigned, or voluntarily taken on additional activities, including: (1) creating and providing SCWE training, including “hot spot,” supervisory, and refresher training; (2) conducting “interventions” (*i.e.*, informally resolving concerns) between employees and supervision; (3) developing ECP promotional materials; (4) preparing and/or managing PSEG Nuclear responses to NRC-referred allegations; (5) developing, conducting, and analyzing the quarterly Salem / Hope Creek SCWE survey, and communicating the results to management and the workforce;

and (6) developing and providing various other developmental and training materials. In addition, the ECP Manager is a lead controller and coach for the emergency response organization.

It does not appear that all of these core and ancillary tasks can be effectively performed by a single individual, particularly at a three-unit site like Salem and Hope Creek. There are indications that the time and effort required to perform these additional activities may have had a negative impact on the effectiveness of the ECP or the quality and/or quantity of the ECP Manager's principal responsibilities. PSEG should ensure that the ECP's resources are sufficient to effectively meet all of the ECP's current core and ancillary tasks and responsibilities. PSEG should also review whether some or all of the ECP's ancillary responsibilities should be transferred outside of ECP.

3. ECP Investigations

a. Investigation Quality

The Team reviewed a sample of ECP investigation files taken from the years 2002, 2003, and 2004. The concerns that formed the basis of the investigation files reviewed included retaliation (including claims of harassment, intimidation, retaliation, and discrimination), technical, or other types of concerns. In many cases, the investigation file did not include sufficient information with which to evaluate the adequacy of the investigation. Nonetheless, based on the information contained in the files, together with discussions with the ECP Manager, it appears that issues raised to the ECP have been adequately investigated and the conclusions reached were fair and supportable.

The ECP Manager is versed in investigation techniques and appears to have the capability to conduct a thorough investigation and properly evaluate the evidence collected. In order to conserve resources, the ECP Manager will occasionally assign issues to other Salem/Hope Creek personnel to conduct the investigations. This is appropriate and has been used successfully at other sites. However, the non-ECP personnel assigned investigations at Salem and Hope Creek have not received training on investigations or ECP procedures and processes. Further, the ECP Manager provides varying levels of oversight to these individuals during the course of the investigation. The written materials associated with the investigations performed by non-ECP personnel suggest, that the investigations were not as thorough as those conducted by the ECP Manager, although based on the information reviewed, the conclusions reached in these cases appear to be correct and supportable. Where non-ECP personnel are assigned to investigate and resolve ECP concerns, PSEG must ensure that the assigned individual has been trained or is otherwise qualified to perform the required tasks. PSEG should also ensure the assigned individual receives sufficient oversight by the ECP during the course of the investigation.

Effective ECPs use an administrative manual or other guidance that directs and guides their entire investigation process, from intake of a concern, through data collection and analysis, to the content and organization of investigation files. Rigorous adherence to such guidance helps to ensure that all issues have been properly evaluated and documented, and that adequate and timely feedback has been provided to the concerned individual. PSEG has no equivalent controlling guidance, and its processing of ECP concerns does not meet industry good practices. For example, the ECP does not consistently prepare a concern disclosure statement, case activity

logs, investigation plans, or document employee feedback. Accordingly, PSEG should prepare, and rigorously follow, an administrative manual that guides ECP's processes.

b. Investigation Files and Reports

The quality and content of the investigation files reviewed varied considerably and the formality and level of detail has declined since the ECP staffing was reduced from three to one. The quality of PSEG's ECP files are below industry's best practices. The Team reviewed a few PSEG ECP investigation files that were documented in a formal or systematic manner. The majority of the investigation files, however, consisted of a minimum of material generally stored in one or more manila folders. These materials generally consisted simply of a statement of the concern, prepared either by the concerned individual or the investigator, handwritten interview notes, and a short investigation report. These materials are not auditable standing alone, that is, without the ECP Manager leading the reader through the investigation step-by-step. Accordingly, ECP investigation files should be documented consistent with industry practice. In particular, ECP investigation files should contain the following documentation:

- Concern disclosure statement.
- Investigation plan.
- Case activity log.
- Interview and contact records or reports.
- Investigation report, which documents and analyzes the relevant evidence and provides the ECP's ultimate findings and conclusions.
- All relevant documentation collected and reviewed.
- Feedback to the CI.
- Corrective action records, identifying the actions, documenting that the actions have been entered into the appropriate site program; and, recording completion dates.
- Feedback from the CI.

Approximately half of the concerns brought to the ECP are resolved in an informal manner. Resolution of concerns using an informal process (referred to by the Salem / Hope Creek ECP as an "intervention") is used successfully at other nuclear sites. The ECP procedure should, but does not, contain any guidance on the manner in which these informal actions should be conducted or documented. And, in most cases, such interventions are not documented other than with a tally of the number of such interventions conducted. Such actions should be documented, at a minimum, with regard to the nature of the concern and those actions taken by ECP to resolve it. This allows ECP to track and trend an additional source of data regarding the workforce and SCWE, potentially permitting the early identification of SCWE challenged organizations or workgroups. Such documentation also provides a record in the event the underlying concern evolves into a more significant issue and / or is referred to an outside agency for resolution.

Investigation findings and conclusions, as well as the relevant evidence and analysis of that evidence which supports these findings, should be documented in an investigation report. This report should also provide a summary of all of the various aspects of the investigation.

PSEG ECP prepares investigation reports for all investigations, however, in most cases, the report simply provides a short summary of the concern, findings, and recommendations without documenting the relevant evidence obtained, the investigator's evaluation of this evidence, or other aspects of the investigation.

Where the CI raises an issue involving retaliation, the investigator must evaluate the evidence against the four elements of retaliation under 10 CFR 50.7. This evaluation should be documented in the investigation report. With regard to the investigations into alleged retaliation, none included documentation suggesting that the ECP staff evaluated the evidence against the elements of retaliation.

c. Confidentiality

The ECP procedure indicates that an objective of the ECP is to protect an individual's identity and the confidentiality of information, but also cautions individuals of the limit to this protection. The limits and warnings discussed in the procedure are reasonable, appropriate and in line with the industry (as well as with the standards set forth by the NRC Allegations Program). Discussions with the ECP Manager indicate he understands the importance of confidentiality to the ECP process, takes all reasonable efforts to ensure that concerns and individuals are treated confidentially, but also understands the limits to confidentiality described in the ECP procedure. The ECP Manager also communicates the reasonable limits of confidentiality to individuals using the ECP or whom become involved in ECP investigations.

d. Customer Feedback

PSEG ECP does not formally solicit feedback from their customers. Employee trust and confidence in the ECP is enhanced whenever employees using the program are asked for their opinion on the experience. Even where a CI may not have received the findings he or she had desired, they frequently will provide accurate and constructive feedback if asked. Accordingly, PSEG should formally solicit and document ECP customer feedback. Requests for feedback should be formally provided to the CIs via a mailed feedback request form to encourage honest responses.

4. ECP Performance Indicators

Like most nuclear industry ECPs, the PSEG ECP conducts self assessments through the use of ECP and site SCWE PIs. The ECP develops, collects, and reviews these PIs, and distributes them to site management. The ECP collects and tracks the following PIs:

- Number of concerns received.
- Number of concerns investigated.
- Number of concerns resolved informally.
- Number of concerns in backlog.
- Percent of concerns substantiated.
- Average age of open concerns.
- Average time to resolve concerns.

The numbers of concerns received and resolved by the ECP indicate that the PSEG ECP is being used on a regular basis by the Salem and Hope Creek workforce, and at a rate

significantly higher than the number of concerns brought to the NRC. In particular, seventy concerns were brought to the ECP in 2002 and eighty-eight in 2003. In 2002, twenty-three concerns resulted in investigations and forty-seven were resolved informally. In 2003, the ECP conducted thirty-three investigations and resolved fifty-five concerns informally.

Salem and Hope Creek employees raised fourteen allegations directly to the NRC in 2002 and seven in 2003. The number of allegations is not excessive when compared to the industry as a whole. Notwithstanding some employees' concerns about the effectiveness of the sites' ECP, the number of concerns raised directly to the NRC when compared to the number brought to the ECP, provides evidence that the workforce continues to view the ECP as a viable alternative.

The ECP does not have a backlog of concerns, and the time to resolve concerns is acceptable and is not indicative of an inefficient process. However, the time to resolution will likely increase when the ECP begins to document its activities in a more thorough, consistent, and auditable manner, as discussed above.

The ECP identifies a concern to have been substantiated whenever ECP's review or investigation of the concern results in any corrective action, even if the corrective action arises out of an ancillary investigation finding or the particular concern raised was not validated. Nonetheless, in such cases, the ECP will identify and categorize the issue as validated (and which led to the need for corrective action). For example, if the CI raised a discrimination concern, which is not substantiated, yet the investigation concluded that an issue had not properly been entered into the CAP, the ECP PIs will note a substantiated concern, but would classify the concern as a technical issue, not discrimination.

This PI shows that approximately sixty percent of the concerns brought to the ECP over the last twelve months have been substantiated. However, with the above process in mind, this does not appear to be indicative of any adverse SCWE inferences. In this regard, it should be noted that the ECP tracks recommended corrective actions to completion.

Additional ECP PIs are frequently used by ECPs and should be considered by the PSEG ECP. These indicators provide additional data with which to assess the effectiveness of the ECP and the site SCWE. Such additional ECP PIs are:

- Classification of CIs (*e.g.*, departments, union/non-union).
- Classification of concerns (*e.g.*, nuclear safety and quality, retaliation, industrial and personnel safety, security, human resources, management practices, training, technical (non-safety related), human error, intentional wrongdoing, EEOC, NRC referred allegations, SCWE, chilling effect, environmental, other).
- The method by which the concern was received (*e.g.*, exit interviews, interviews, telephone, mail, walk-ins, condition report process, Web site, hotline, anonymous, drop box, tailgate meeting, presentation, departmental chat, survey, management, NRC referral, DOL).
- Number of concerns processed via the CAP.
- Number of CIs requesting confidentiality.
- Average time to complete corrective action.
- Number of CIs satisfied or dissatisfied with ECP process.

- Number of CIs satisfied or dissatisfied with ECP results.
- Number of concerns reported within PSEG, versus to outside entities (e.g., NRC, DOL, OSHA, media).

5. Promotion

The most recent PSEG SCWE survey data showed that ninety-seven percent of the respondents were “familiar” with the ECP. However, interviews with Salem and Hope Creek personnel indicate that a number of those interviewed do not understand ECP’s role as an alternative mechanism for getting concerns addressed independent of line management. Others may know ECP’s role, but are not aware of, or misperceive the process or manner in which it addresses concerns. This feedback suggests that PSEG’s promotion of the ECP has not been fully effective.

The primary tool used to promote the ECP is the site’s closed circuit TV system. The ECP Manager posts single-frame advertisements of the ECP to appear on a periodic basis. However, the ECP Manager’s workload has not allowed him to post new messages for a number of months. The ECP is also mentioned in the site GET materials. However, it is not routinely promoted in any other manner. For example, the ECP is only rarely mentioned in the site’s daily newsletter, the “Outlook.” Similarly, although as discussed earlier, PSEG has rolled out a SCWE page on the Salem / Hope Creek intranet, only a limited amount of information regarding the ECP is posted on this page.

PSEG should develop additional ECP promotional material and integrate it with an overall SCWE message. This overall message should then be publicized to the workforce using various methods, such as the electronic billboards located at the administration building and the main access point, the PSEG intranet SCWE page, the daily Outlook newsletter, ECP specific training, and by ensuring that all levels of management routinely remind the workforce of the ECP role on site.

H. Management Effectiveness In Detecting And Preventing Retaliation And Chilling Effect

The Team did not review the merits of individual claims of retaliation currently pending at the company; however, based upon the numerous interviews the Team did conduct, and the relatively small number of such claims, the Team could not identify a systemic issue involving management’s ability to detect and prevent retaliation. In contrast, as best illustrated in Section V.B., “Unresolved Conflicts,” management has not been effective at understanding or addressing the potential for a chilling effect in response to how management has addressed highly visible employee concerns and actions associated with operational events.

1. Employee Perceptions

a. Survey Results

PSEG’s quarterly SCWE surveys of the site population include four questions that, taken together, assess workers’ views on whether retaliation would, or could, result from their raising nuclear or quality concerns. The results of the most recent PSEG SCWE survey (third quarter, 2003) and the average results of the most recent four quarters, demonstrate marginally acceptable performance in this area with the third quarter results showing a slight positive trend. However,

the results are not as positive as those found at sites with strong SCWEs, which generally elicit well over 90 percent positive responses to questions addressing potential retaliation.

<u>PSEG SCWE Survey Question</u>	Most Recent Q	Four Q Rolling Ave.
	(percent positive responses)	
● I believe my work environment is generally professional and open (<i>i.e.</i> , free of any harassment, intimidation, discrimination, or retaliation)	83%	84%
● I believe I can raise any nuclear safety or quality concern without fear of retaliation	91%	87%
● I can use the ECP without fear of reprisal.	85%	85%
● I feel free to raise nuclear safety / quality concerns through the CAP w/out fear of reprisal.	90%	88%

The Synergy Survey asked one question regarding potential retaliation for raising concerns. That question, “do you know someone who, during the past year, has experienced a negative reaction from supervision or management for having raised an issue or concern related to nuclear safety,” yielded a twenty percent affirmative response, which is lower than, but not inconsistent with recent PSEG SCWE survey results. The Synergy report commented that this was a high negative result, and normally results from “the occurrence of a particularly visible event that has occurred in the recent past.” However, the Synergy report stated that employee feedback obtained from the survey’s write-in comments did not suggest such an incident had occurred.

b. Employee Feedback to Assessment Team

Employee interviews support the Synergy survey finding that there appears to be an undercurrent of concern among the workforce regarding management’s commitment to ensure that employees who report issues not be subjected to any form of retaliation for doing so, no matter how minor. As discussed above in Section V.E. of this report, most employees believe management wants them to report significant issues, such as those involving nuclear safety or quality; however, there is not a similar view of management’s desire to hear concerns of a less significant nature. A number of employees also articulated a fear that management would take some type of retaliatory action against them if they pursued less significant issues that could impact plant activities.

Further, employees reported a number of reasons for their perceptions, which, in turn, support a continued sense of distrust. For example, some employees expressed concern over previous management actions against workers that they believe could have been motivated by their raising of concerns. These employees stated that the reasons for management’s actions were not apparent to the work group, and management had made no attempt to explain their decision.

In a similar vein, some employees reported that many management actions against represented workers had been subject to external review and subsequently overruled. Based on this information, whether or not accurate, these employees now perceive that management takes adverse actions for illegitimate reasons, which could include retaliation for employees raising issues.

Employees also described examples of poor behaviors by management personnel in response to employees who express alternative opinions, question decisions, or bring issues to the attention of management. Such behavior, including inappropriate comments, facial expressions, or outbursts, has sent a message to certain employees that management is selective in which issues or concerns they are willing to listen to, and address.

Finally, a few employees interviewed noted that their level of trust in management has eroded because of management's delay in publishing the results of the Synergy Survey. Employees who reported this as a concern felt that management was attempting to "hide" or "massage" poor results before releasing them, and that this reinforced their view that management does not want to acknowledge or fix problems at the site.

2. Basic Supervisory Skills Training

Workers' opinion of their leader's trustworthiness, fairness, and consistency will be a significant factor in whether they perceive employment actions as retaliatory. Basic supervisory skills training will provide supervisors with the tools and behaviors they need to instill trust. Effective skills training should address: (a) management skills necessary to foster a workplace environment in which employees are comfortable raising concerns; (b) positive and creative ways of managing to eliminate the residual effects from past leadership styles and techniques that may have contributed to an unhealthy environment; (c) personal skills and behaviors that enhance the environment, avoid disruptive behavior, and encourages respectful treatment of all personnel. In addition, such training should emphasize the relationship between these skills and the promotion and maintenance of a SCWE in the nuclear workplace.

PSEG conducts a "Leadership Academy" for all incoming supervisors and managers. The Leadership Academy consists of approximately three weeks of training programs covering a variety of subject areas, all of which are intended to provide supervisors with the skill set necessary to be effective. Although these courses appear to provide supervisors with the skills necessary for effective leadership, none address the relationship between these skills and SCWE. Further, training records indicate that only about half of the current management personnel at Salem and Hope Creek have attended the Leadership Academy.

3. Supervisory Training on Detecting and Preventing Retaliation and Chilling Effect

Nuclear sites with strong SCWEs effectively detect and prevent retaliation and address the chilling effect that can result from adverse employment actions taken for entirely legitimate reasons, allegations of retaliation, or other factors. These sites achieve this goal through focused training of company and contractor supervisory and management personnel, expert guidance for supervision, internal processes to review management actions before they are taken, as well as a process to monitor the work environment for potential chilling effects and intervening at an early stage to resolve incipient issues and restore work place stability.

Nuclear sites with a strong SCWE train all company and contractor supervision and management personnel on how to effectively detect and prevent retaliation. Such training equips management personnel with the knowledge to recognize prohibited conduct, and emphasizes the importance of preventing both discrimination and the creation of a chilling effect.

The PSEG ECP provides a SCWE-specific training course for supervisory and management personnel entitled "Taking Action." Since its rollout in 2000, the course has been

provided to 155 supervisory and management personnel. The course is provided to new supervisors attending the PSEG Leadership Academy, and has been provided to current supervisors and managers as a stand-alone training module. Abbreviated versions of the course were also provided to ninety-two members of the security force in 2003, and to forty-three Maintenance supervisors and managers in 2004.

The four-hour course addresses three substantive areas: (1) how to effectively receive concerns; (2) how to effectively manage the concern resolution process; (3) how to recognize and prevent “threats to the SCWE” (retaliation, hostile work environment, chilling effect). In addition to copies of the course presentation slides, participants also receive a “Taking Action” workbook developed by Employment Learning Innovations, Inc. The workbook is a stand-alone set of materials provided to the students as a reference and not discussed in detail during the course presentation.

Based on a review of the course materials, it does not appear to be a fully effective program for a number of reasons. For example, although the course instructs supervisors to prevent SCWE “threats,” it does not provide any tools necessary to ensure that employment actions are not, or likely will not be perceived to be retaliatory. In this regard, a course slide titled “Examples of Discriminatory / Retaliatory Practices” simply lists examples of adverse actions -- improperly suggesting to supervisors that taking such actions where the employee has engaged in protected conduct is retaliatory. The training also provides no instruction on how to detect and minimize a chilling effect that could result from legitimate employment actions.

The course’s scope also decreases its effectiveness and it would be much improved by separating the subjects taught into two or more separate modules. For example, the course addresses legal principles of employee protection, retaliation, how to address and resolve concerns, deliberate misconduct, civil treatment of employees, and performance management. A more effective program would teach skills associated with the detection and prevention of retaliation and chilling effect, and supervisory SCWE principles as separate courses. The supervisory SCWE course would augment the basic supervisory skills training already taught to PSEG supervisors by reinforcing PSEG expectations for encouraging employees to raise concerns, communication skills, management behaviors, how to resolve concerns, and performance management.

4. Responding to Claims of Retaliation

In the past, allegations of retaliation for engaging in protected conduct have been raised to various PSEG organizations, including legal, HR, the ECP, corporate management, and the corporate Ethics Hotline. Claims clearly alleging that an adverse employment action was taken as a result of raising safety concerns have most often been referred to the company’s nuclear counsel for review. For example, a small number of the sixty-five individuals terminated as a result of PSEG Nuclear’s Fall 2003 reorganization recently contacted PSEG employment counsel and alleged that their terminations were, or may have been, in retaliation for raising safety-related concerns at Salem or Hope Creek. None had raised their claims previously to HR, ECP, or PSEG management. Employment counsel coordinated with nuclear counsel and the ECP Manager to collect facts supporting the terminations and assess whether there was any basis to suggest that the decisions had any relationship to protected conduct. Based on discussions with employment and nuclear counsel, the Team concludes that their coordination was timely

and efficient and that the resulting review was of sufficient scope and depth to accurately assess the claims.

5. Management Review Of Proposed Adverse Actions

Retaliation against persons who raise concerns can take many forms and occur at various levels of an organization. However, retaliation is most likely to occur, or be perceived to have occurred, in relation to employee discipline. Further, discipline that may appear to the work group to have been motivated by, or taken with regard to the raising of concerns, can have a significant impact on the work group's willingness to raise concerns.

Based on input received during interviews of supervisory and management personnel, and a review of the information covered during supervisory training, it does not appear that management is adequately trained to assess whether employee discipline could be viewed as retaliatory, or to detect and minimize a chilling effect arising from an adverse action. As discussed above, enhanced supervisory training will provide the tools to help reduce the potential for retaliation and chilling effect. However, many sites with a strong SCWE have established an added check to supervisory decision-making in this area by institutionalizing a process to subject "significant" disciplinary actions (*i.e.*, above oral reprimands) and other actions having an adverse effect on an employee's job (*e.g.*, reductions in force), to a second-level review by trained management personnel. The review is intended to ensure, among other things, that the persons recommending adverse employment decisions have followed appropriate policies and procedures, that the actions are based on legitimate, nonretaliatory business factors, and that management has taken, or will take, effective actions to prevent or mitigate any chilling effect that may result from the implementation of the proposed adverse employment action.

PSEG currently has nuclear counsel review termination decisions involving Salem and Hope Creek personnel. However, less severe disciplinary actions are not subjected to nuclear counsel review and the potential for a chilling effect is not generally assessed. Further, PSEG has created three management teams (Executive, Manager, and Supervisory) that will, among other things, review disciplinary actions. However, according to the Teams' charters, their review is conducted after, not before, implementation of the discipline. The Teams also are not currently chartered to assess and address the potential chilling effect arising from the actions reviewed.

6. NRC Allegations

The number, nature, and trend in allegations employees raise directly to the NRC, whether or not previously raised internally, provides one tool to help assess management's ability to detect and prevent retaliation. For example, individuals typically raise concerns directly to the NRC because they believe site management cannot or will not respond adequately, but also because they may believe that management would take some form of adverse action against them had they raised the concern internally.

	2002 PSEG/industry ave. <u>(2/3 unit sites)</u>	2003 PSEG/industry ave. <u>(2/3 unit sites)</u>
Received		
All	14 / 7	7 / 6
Discrimination	3 / 1	3 / 1
Substantiated	4 / 3	1 / 1
Open	3 / -	3 / 3

As can be seen in the above table, in 2003, Salem and Hope Creek personnel raised concerns directly to the NRC at the industry average for two and three unit sites. This number showed a significant decrease from the number Salem and Hope Creek workers raised to the NRC the prior year. During the first quarter of 2004, ten allegations were submitted to the NRC by Salem and Hope Creek personnel. Further, while the number of discrimination allegations raised to the NRC by Salem and Hope Creek workers during the same time period in 2002 and 2003 was higher than the average at other two and three unit sites, three such allegations each year is not excessive. Taken together, these statistics do not suggest that there exists a general fear of retaliation from raising concerns directly with PSEG among Salem and Hope Creek personnel. Although the number of NRC allegations has risen during the first quarter of 2004, this is not atypical given the level of scrutiny at Salem and Hope Creek. Management should continue to monitor and trend these numbers as part of its overall efforts to assess the SCWE.

7. Management Behaviors and Performance Management Process

All levels of management must understand SCWE concepts, exhibit behaviors that promote employee confidence in raising and resolving concerns, and be held accountable for failures to exhibit such behavior. One mechanism used to encourage positive, and discourage negative behaviors among management personnel, is the performance management processes. Many sites with strong SCWEs insert SCWE expectations for supervisory and management personnel directly into annual performance appraisals. Thus, all supervisory and management personnel are rated on their ability to promote a SCWE. In addition, such sites also hold management accountable for poor SCWE behavior through disciplinary action.

The PSEG performance management tools, including the annual performance appraisals provided to management personnel, do not measure or rate SCWE performance. Any such measurement is solely up to the discretion of individual raters, although there is no evidence that this has occurred.

Interviews of Salem and Hope Creek personnel provided examples of behaviors exhibited by certain managers and supervisors that can discourage, and in some cases have allegedly discouraged, workers from bringing concerns to their attention. While there is no evidence that these behaviors are widespread among the management team, the repetitive nature of such incidents among a limited number of supervisors and managers, as reflected in a number of the fourteen unresolved conflicts set forth in Section V.B., suggests that either these behaviors have not been considered in a negative light, or if they have, that senior management has not taken effective action intended to discourage such behavior through use of the performance management or disciplinary processes.

VI. INDEPENDENT TEAM CONCLUSIONS AND RECOMMENDATIONS

A. Four SCWE Criteria

The Team's conclusions as to the four criteria in assessing SCWE are:

1. Do personnel feel free to raise nuclear safety concerns without fear of retaliation for doing so?

Conclusion

Personnel will raise nuclear safety concerns. Some individuals did express some hesitancy in raising issues for fear of retaliation, while others expressed similar hesitancy because of issues having been raised yet not resolved, the lingering effects from the unresolved issues cited in this report, or an ineffective corrective action program.

2. Is the site problem identification and resolution process effective (primarily the corrective action program) when addressing employee concerns?

Conclusion

While management has been receptive to issues perceived to be significant or involving a nuclear safety issue, management has been less receptive and ineffective in addressing other employee concerns, particularly longstanding equipment problems, principally due to ineffective implementation of the corrective action program and work management practices.

3. Are there alternate mechanisms, such as an Employee Concerns Program, available for personnel to raise nuclear safety concerns and are they effective?

Conclusion

Although the Employee Concerns Program has the requisite elements of an acceptable program, it could be enhanced. As implemented, the ECP has been ineffective in that a significant fraction of site personnel (15-20 percent) do not view it as a viable alternative to raise concerns, and the program did not identify to management with sufficient clarity the SCWE issues reflected in the findings of this report, the Synergy Survey, and USA Assessment.

4. Is management effective at detecting and preventing retaliation and addressing any chilling effect in response to employee concerns?

Conclusion

The Team did not review the merits of individual claims of retaliation currently pending at the company; however, based upon the numerous interviews the Team did conduct, and the relatively small number of such claims, the Team did not identify a systemic issue involving management's ability to detect and prevent retaliation. In contrast, as best illustrated in Section V. B., "Unresolved Conflicts," management has not been effective at understanding or addressing the potential for a chilling effect in response to how management has addressed highly visible employee concerns and actions associated with operational events.

B. Nine Elements

The Team's conclusions and recommendations as to the nine elements of a healthy SCWE, derived from NRC's Policy Statement, are:

1. Documentation and communication of management’s SCWE expectations

a. Conclusion

PSEG recently issued an appropriate SCWE Policy, but now needs to effectively communicate that policy and assure it is reflected in implementing procedures, training, and promotional material.

b. Recommendation

Assure management expectations and standards regarding SCWE and professionalism are established and communicated.

- Assure the recently issued SCWE policy is reflected in all implementing procedures, as well as SCWE training and promotional material.
- Document expectations regarding procedural compliance, conservative decision-making, and roles and responsibilities for operational decisions.
- Emphasize management’s responsibility to promote and act in conformance with these standards and expectations.

2. Training on, and reinforcement of management’s SCWE expectations

a. Conclusion

SCWE and supervisory skills training has been insufficient and needs to be upgraded.

b. Recommendation

Train all personnel on the recently-issued SCWE policy, upgrade existing supervisory skills training, and thereafter, promote and reinforce SCWE on an ongoing basis. This training should include:

- Revising site access training to incorporate the revised SCWE policy.
- Training all personnel on SCWE, including contractors, concerning how to raise an issue and what to expect from management in responding. Consider using the unresolved issues discussed in this report as case studies, to train workers on management’s SCWE expectations; also consider involving the participants in the unresolved conflicts in developing, reviewing, and / or teaching these case studies.
- Training for all supervisors and above on SCWE. This effort should begin with an initial needs-based analysis of the components to SCWE and supervisory skills training, including how to respond to a concern, as well as identification of retaliation and chilling effect. In reviewing the basic supervisory skills training, consider emphasizing the relationship between supervisory skills and SCWE in such Leadership Academy courses as: “People Skills,” “Communication Skills,” “Conflict Management,” and “Power of Recognition.” Similar messages and expectations should be incorporated into the Leadership Academy courses which are focused on performance management skills and best practices, such as “Performance Issues,” “Behavioral Event Interviewing,” and “Positive Discipline.”

- Ensure all supervision receive basic supervisory skills training. In this regard, establish a time period (*e.g.*, 90 days) for all current supervisors to receive such training, and a time period (*e.g.*, 30 days) for all new supervisors to receive comparable training.
- Implement and maintain a communications strategy that includes SCWE elements, such as:
 - Communicate SCWE action plan elements to the site (including the findings, conclusions, and recommendations of this report and PSEG’s responses to NRC’s January 28th letter) and thereafter maintain on the SCWE web page.
 - Consider SCWE stand-downs to address and resolve unresolved conflicts and legacy issues, and to reset prospective expectations.
 - Increase management visibility and two-way interaction with all levels of management and workers, *e.g.*, town hall meetings with senior management, management by walking around (MBWA), observing work in the field, tailgate sessions, etc.
 - Make greater use of PSEG’s “Good Catch” program.
 - Add SCWE elements to “4Cs” meetings.
 - Develop additional and varied promotional materials and publicize them using various methods around the site, *e.g.*, intranet, posters, electronic billboards, news articles.
 - Develop and implement an external communications plan, including to the NRC and interested stakeholders.
 - Make effective use of the change management process.

3. Elements and implementation of the Corrective Action Program

a. Conclusion

Implementation of the Corrective Action Program and work management processes have been ineffective as set forth in this report and the USA Assessment.

b. Recommendation

Correct identified deficiencies in the implementation of the Corrective Action Program and work management processes as set forth in this report and the USA Assessment. In this regard:

- Leadership needs to re-establish the roles and responsibilities of those involved in these programs and re-emphasize adherence to these processes.
- Re-establish management’s expectations as to the appropriate threshold for raising issues in light of the practice that has developed relative to longstanding issues.

- Develop and effectively implement a plan to aggressively address longstanding equipment problems. Involve Operations in the process, ensure sufficient resources are applied, and communicate status to the site.

4. Elements and implementation of the Employee Concerns Program

a. Conclusion

Although the Employee Concerns Program has the requisite elements of an acceptable program, it could be enhanced, and, as implemented, it has been ineffective in the two respects previously noted.

b. Recommendation

Upgrade ECP consistent with the findings in this report, including elements, such as:

- Define core ECP responsibilities and then assure resources are adequate.
- Establish and follow a rigorous administrative process for core ECP functions, including case management, investigations, and documentation.
- Augment and enhance ECP promotional materials and activities.

5. The quality and use made of SCWE self assessments

a. Conclusion

Recent work environment assessments performed by Synergy and USA are appropriate diagnostic assessments, the results of which are currently under review by management. Comparable assessments should be conducted on a periodic basis.

b. Recommendation

Continue PSEG SCWE self assessment activities, including:

- Periodically perform a survey similar to the recent Synergy Survey so as to monitor progress and trends.
- Upgrade the PSEG SCWE quarterly survey to include elements, such as:
 - Identification of department affiliation of those surveyed to define the existence of pockets in need of management attention.
 - Provide more meaningful analysis of survey results to include comparison of industry data.
 - Provide clearer and more meaningful recommendations upon which management can act.
- Establish SCWE Performance Indicators and thereafter monitor such indicators consistent with how management monitors and responds to other indicators of plant performance.

6. SCWE implications from management's administration of Labor Relations and Human Resources policies, procedures, and practices

a. Conclusion

The HR support and Labor Relations practices need to be better aligned with SCWE principles.

b. Recommendation

Align HR and Labor Relations Practices with management's SCWE expectations, including:

- Establishing an Executive Review Board to review PSEG and contractor proposed adverse action from a SCWE perspective.
- Establishing a "People" Response Team to identify emerging personnel issues and assure an effective response.
- Define, and train on, the interplay among SCWE, the collective bargaining agreement, performance evaluations, and disciplinary programs.
- Consider inclusion of SCWE attributes in supervisory performance evaluations and other means to hold managers accountable for performance in SCWE areas through the established performance evaluation and/or discipline system.

7. NRC allegations, including PSEG's responses to NRC referred allegations

a. Conclusion

The number of NRC allegations in 2003 appear to be within the industry norm for a three-unit site. Although the number has risen during the first quarter of 2004, this is not atypical given the current level of scrutiny at Salem and Hope Creek. PSEG has appropriately responded to those allegations the NRC has referred back to PSEG.

b. Recommendation

Continue to review NRC allegations referred back to PSEG to assure they are promptly and thoroughly reviewed.

8. Management's responses to claims of retaliation

a. Conclusion

A uniform system is not in place to assure all claims of retaliation are promptly and uniformly reviewed, and management has not sufficiently understood or considered the chilling effect in response to such claims.

b. Recommendation

Establish a process to assure prompt and uniform investigation of retaliation claims regardless of where they are raised in the organization. This fact-finding function should not remove ultimate responsibility from line management in responding to claims of retaliation.

9. Management of and interface with contractor personnel

a. Conclusion

Management of and interface with contractor personnel does not present a programmatic challenge to the SCWE at the Salem and Hope Creek site; however, one contractor indicated a hesitancy to raise an issue because he was a contractor.

b. Recommendation

Assure providers of contract personnel establish a comparable SCWE program, including a SCWE policy, training, and a requirement that PSEG is notified of any retaliation claim and provided the results of any review.

C. Additional SCWE Related Issues

In addition to the four criteria and nine elements, the Team focused on SCWE implications from certain unresolved events involving operations, the NRC inspection record, and corporate / site interface. The Team's conclusions and recommendations as to these areas are:

1. Unresolved Events

a. Conclusion

While none of the unresolved events that are described in this report involved reactor operations that put either the plant or public at risk, the collective SCWE significance of these events demonstrate that some in management, as well as some among the workforce:

- Place a greater emphasis on production and scheduling considerations than conservative decision-making.
- Tolerate degraded equipment conditions and expect personnel to work around operational challenges presented by such conditions.
- Tolerate procedural non-adherence.

These events also demonstrate that some in management:

- Do not clearly communicate standards or the rationale behind their actions, or provide feedback to those raising issues.
- Have taken actions, or failed to take actions, that have had a chilling effect on the willingness of certain employees to raise concerns.
- Become involved in decisions more appropriately the responsibility of Operations.

Management is addressing and making progress in overcoming many of these perceptions, but has not yet regained the trust and confidence of the workforce. For example, management is in the process of ensuring that the responsibility and decision-making authority remains within Operations, but needs to further clarify expectations as to these misperceptions, and then act over an extended period of time consistent with those expectations. This effort is made more difficult by some in the workforce who have not accepted the necessary standards and requirements for strict adherence to procedures. In some cases, mixed messages from management's actions with respect to procedural adherence compound the difficulty.

b. Recommendation

Although former management allowed the conditions to exist that caused these unresolved conflicts to occur and linger, the current Salem / Hope Creek management team must visibly embrace the above recommendations (particularly recommendations 1, 2, 3, and 6) and lead implementation over time to regain the trust and confidence of the workforce.

2. NRC Inspection Record

a. Conclusion

The record reflects the site's failure to:

- Consistently translate engineering information into work documents.
- Consistently take prompt and effective correction action.
- Adequately identify or properly classify procedural violations.

b. Recommendation

- Review the corrective action program data base to determine if there are similar findings identified regarding the process for translating engineering requirements into working documents. From this review, determine the scope of the problem, and if additional corrective actions are warranted.
- Determine if the findings in Section V.A. of this report represent a systematic problem, and determine if additional corrective actions are appropriate.
- Perform a review of the Root Cause Analysis and the corrective action statement for the "A" Emergency Diesel to determine that the correct level of analysis is specified for copper content.
- Reconsider the evaluation findings of Notification 20140525 to ensure consistency of the facts with the findings. Verify that the messages sent in the corrective actions are consistent with management's standards and expectations for procedural adherence.

3. Corporate / Site Interface

a. Conclusion

- As to working-level personnel and mid-level management, the interface has not caused a past or current SCWE issue in that the vast majority within this group has not linked the interface with the raising or addressing of concerns. Some working-level personnel and mid-level site managers, however, have assumed a negative impact from the interface in that they infer: (1) site management is not fixing longstanding equipment issues because corporate is not providing the necessary funds, and (2) site management's conduct in the course of the unresolved conflict events resulted from perceived pressure from corporate to place production and scheduling issues over conservative decision-making.
- As to senior site and corporate management, again this group has not linked the interface with the raising or addressing of concerns. Nonetheless, several within this group are frustrated because they believe corporate guidance has not been

clearly communicated, and the roles and responsibilities among nuclear officers and their corporate counterparts, particularly in the areas of HR, Labor Relations, Budget, and Financial Planning, have not been clearly defined. Further, some employees have perceived the business planning process and incentive compensation process as communicating a greater emphasis on production and schedule than on conservative decision-making.

b. Recommendation

PSEG needs to more effectively communicate between corporate and nuclear. It also needs to clearly define the interplay between PSEG Nuclear, PSEG Power, and PSEG relative to such support functions as financial planning, HR support, and Labor Relations, and thereafter, document the respective roles and responsibilities in appropriate guidance documents, such as the PSEG Power Play Book. Specifically, corporate should:

- Improve the direct communications link from corporate to the site.
- Improve the communication of corporate issues to the site, including business planning, incentive compensation, corporate structure, and reorganizations.
- Provide better senior level and middle management level direct interfaces between corporate and the site.
- Establish and maintain a nuclear succession plan to assure stability.
- Review goals and revise as necessary to assure proper relationships among safety and production parameters.
- Revise Power Behaviors to include a safety value and list it first.
- Review incentive compensation to assure alignment with recommendations 4-6 above.
- Site management must embrace and consistently communicate corporate goals and behaviors.

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January 28, 2004

Mr. E. J. Ferland
Chairman, President and Chief Executive Officer
Public Service Enterprise Group
80 Park Plaza
P.O. Box 570
Newark, New Jersey 07101

SUBJECT: WORK ENVIRONMENT FOR RAISING AND ADDRESSING SAFETY
CONCERNS AT THE SALEM AND HOPE CREEK GENERATING STATIONS

Dear Mr. Ferland:

In late 2003, we initiated a special review at the Hope Creek and Salem Generating Stations to assess the environment for raising and addressing safety issues. This letter provides interim results of that ongoing review. We undertook the review in light of information received in various allegations and inspections over the past few years. Previous inspections included both baseline and special inspections following up on plant events. While to this point, we have not identified any serious safety violations, collectively, information gathered has led to concerns about the stations' work environment, particularly as it relates to the handling of emergent equipment issues and associated operational decision making. Concerns regarding the stations' ability to effectively address potential safety issues have been documented in inspection reports and periodic assessment letters. For example, a substantive cross cutting issue was identified in the problem identification and resolution area in both the last annual and mid-cycle performance review letters dated March 3 and August 27, 2003, respectively.

The ongoing special review has included in-depth interviews of numerous current and former Salem/Hope Creek employees, at various levels of the organization. Our interviews have sought to understand the extent to which a safety conscious work environment exists at the stations. Our review has accumulated information about a number of events which, to varying degrees, call into question the openness of management to concerns and alternative views, strength of communications, and effectiveness of the stations' corrective action and feedback processes. Several events involved disagreements or differing perspectives of operators and senior managers on plant operating decisions, particularly as they might impact on continuing plant operation and outage schedules. At a minimum, interviews to date at Hope Creek and Salem have raised questions about whether management has fully assessed and addressed the negative impact such disagreements have had on station personnel.

Our reviews are not yet complete but we consider it important to provide our perspective at this time on what we have found and to request that you initiate your own review. If left unresolved, negative outfall from events relayed to us can create an unacceptable, chilled environment for raising issues and making appropriate operational decisions. We recognize that virtually all plants, including those with strong safety performance, operate with aggressive schedules. Schedule pressure does not, by itself, lead to safety concerns. However, we consider it important for you to take action to thoroughly understand what "messages" the staffs at Salem and Hope Creek have taken from various events over the past few years and address any

situations that significantly detract from maintenance of a strong safety conscious work environment.

We understand steps have been taken to realign management responsibilities in an attempt to better support the separate activities of Hope Creek and Salem and to improve implementation of your corrective action program, overall. While some interviewees have indicated that these steps may be leading to some change under new management, it is vital to assess the climate at the station, address the current impact of previous unresolved conflict, and take steps to assure the staffs at Salem and Hope Creek are willing to participate.

In summary, we request that you conduct your own in-depth assessment. Previous surveys conducted or directed by PSEG might form part of such an assessment. We ask that you provide your plan of action for addressing this matter to the NRC within 30 days of the date of this letter. Approximately two weeks after we receive your action plan, we would like to meet with you to discuss this matter in more detail, so that we may plan for appropriate NRC monitoring and follow up.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the personal privacy-related information and a redacted copy of your response that deletes the personal privacy-related information. Identify the particular portions of the response in question which, if disclosed, would create an unwarranted invasion of personal privacy, identify the individual whose privacy would be invaded in each instance, describe the nature of the privacy invasion, and indicate why, considering the public interest in the matter, the invasion of privacy is unwarranted. If you request withholding on any other grounds, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

/RA/

Hubert J. Miller
Regional Administrator

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cc:

F. Cassidy, President and Chief Operating Officer, PSEG Power LLC
R. A. Anderson, President and Chief Nuclear Officer
A. C. Bakken, Senior Vice President Site Operations
J. T. Carlin, Vice President Nuclear Assurance
D. F. Garchow, Vice President, Engineering and Technical Support
W. F. Sperry, Director Business Support
S. Mannon, Manager - Licensing
C. J. Fricker, Salem Plant Manager
J. A. Hutton, Hope Creek Plant Manager
R. Kankus, Joint Owner Affairs
J. J. Keenan, Esquire
Consumer Advocate, Office of Consumer Advocate
F. Pompper, Chief of Police and Emergency Management Coordinator
M. Wetterhahn, Esquire
State of New Jersey
State of Delaware
N. Cohen, Coordinator - Unplug Salem Campaign
E. Gbur, Coordinator - Jersey Shore Nuclear Watch
E. Zobian, Coordinator - Jersey Shore Anti Nuclear Alliance

Distribution:

H. Miller
 J. Wiggins
 K. Farrar
 R. Blough
 B. Holian
 W. Lanning
 R. Crlenjak
 D. Holody
 D. Vito
 E. Wilson
 F. Congel, OE
 J. Luehman, OE
 OEMAIL

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NAME	Dholody (DJH)	Dvito (DJV)	Rblough (ARB)	Wlanning (WDL)	Ewilson (EPW)
DATE	1/28/04	1/28/04	1/27/04	1/28/04	1/27/04
OFFICE	RI/ORA	HQ/OE	RI/RA	NRR	EDO
NAME	Kfarrar (KLF)	Fcongel * (RJU)	Hmiller (HJM)		
DATE	1/27/04	1/27/04	1/28/04		

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* concurrence via e-mail from J. Luehman, OE.

**PSEG Nuclear
2003 Comprehensive Cultural Assessment**

Executive Summary Report

February 2004



**Chapel Hill, NC
Great Falls, VA
Richmond, VA**

**Executive Summary Report
PSEG Nuclear 2003 Comprehensive Cultural Assessment**

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PSEG Nuclear 2003 Comprehensive Cultural Assessment

I. EXECUTIVE SUMMARY

Background

In December 2003, SYNERGY was commissioned by PSEG Nuclear to provide an independent assessment of the organizational culture and work environment at the Salem and Hope Creek Plants and within the PSEG Nuclear Support organizations.

The 2003 Comprehensive Cultural Assessment (CCA) is part of an ongoing series of activities designed to assess and monitor the attitudes, culture and performance of the PSEG Nuclear organization and to support PSEG Nuclear's continuous performance improvement agenda. It includes industry-benchmarking information, and serves as a baseline against which the effectiveness of ongoing and future performance enhancement initiatives can be measured.

Reporting Structure

This Executive Summary Report documents the methodology utilized in the 2003 CCA and provides specific results, conclusions and opportunities for improvement for the PSEG Nuclear Composite Organization. Additional details are provided in Attachments to this Report.

There are also four Appendices to this Report, which provide detailed information for the:

- Site Operations Organizations
- Engineering & Technical Support Organizations
- Nuclear Assessment Organizations
- Business Support Organizations

Initial Environmental Conditions

The 2003 CCA survey was administered over a three-week period in December 2003. The following noteworthy environmental conditions were found to exist during the period leading up to and through the conduct of the 2003 CCA. These conditions are noteworthy in that they may have influenced the survey results and/or in that they should be taken into consideration in the interpretation and use of the survey results. It should be noted that the information presented below was provided by and therefore represents the perspective of PSEG Nuclear management.

The following noteworthy environmental conditions were found to exist during the period leading up to and through the conduct of the 2003 CCA.

- In March, 2003, a new President and Chief Nuclear Officer for PSEG Nuclear was named, replacing the existing President and CNO who had been in his position for over five years.
- Between July and September 2003, PSEG Nuclear undertook a major restructuring, transforming the organization from a horizontal alignment to a more traditional vertical alignment. Functionally, the day-to-day operations (tactical) were separated from the projects and design basis (strategic).

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- Roles and responsibilities of each Vice President were changed:
 - Vice President of Operations accepted a rotational position at INPO.
 - Vice President of Engineering was named Vice President Nuclear Assessment (a new position).
 - Vice President of Projects was named Vice President Engineering and Technical Support (a new position).
 - A Senior Vice President of Operations was hired from the outside.
 - A new Director of Business Support was hired, replacing the existing Director of Business Support who took a new position in PSEG Power.
- Plant managers for both Salem and Hope Creek were also identified through the restructuring. Salem's Plant Manager was a promotion for an employee, while Hope Creek's Plant Manager was hired from the outside.
- During the restructuring, most nonunion employees (professional and clerical) went through a selection process for their jobs. When the process was complete, close to 100 employees were told they needed to find another position within the company or their employment would be terminated.
- In November, PSEG Nuclear announced plans to review the craft resources (contractor and IBEW) in an effort to ensure we had the right number and distribution of employees and contractors. Employees were also told this review would likely result in a reduction of nearly 100 craft workers (union and contractors), which would occur sometime during the first quarter of 2004.
- A voluntary separation program for the PSEG IBEW Represented Workforce was announced during the survey administration period. Represented employees were given until December 12 to decide if they wanted to take advantage of the separation program that was being offered by the company.
- It was announced in the second week of the survey administration period that employees in the Nuclear Procurement function of Business Support were going to be transferred from Nuclear to the Services Corporation. This represented a new alignment for those employees, although their job location did not change.
- The survey administration began on a Monday, four days after a 45+ day Salem Refueling and Maintenance Outage ended, and the first day after a four-day holiday weekend.
- The new Senior Leadership Team is currently developing our Metrics and 2004 Targets. Neither the metrics for the new organization structure nor the plans for 2004 had been communicated prior to the survey administration period.

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Purpose, Scope & Approach

Purpose

The 2003 CCA was designed to characterize – on a consistent basis – current organizational attitudes and culture, to determine areas of relative strength and weakness, and to identify individual organizations that depart from industry norms and/or general PSEG Nuclear performance norms. In this regard, is intended to provide PSEG Nuclear Management the ability to:

- Measure the effectiveness of current continuous improvement initiatives.
- Identify additional opportunities for continuous improvement; thereby helping to further focus performance improvement plans.
- Compare (i.e., benchmark) the culture and work environment at PSEG Nuclear with other commercial nuclear power plant organizations in the United States.
- Establish a baseline against which future cultural assessments can be compared to identify both trends and progress achieved through the implementation of performance improvement plans.

Scope

The Nuclear Safety Culture portion of the 2003 CCA focused on key elements of the Nuclear Safety Culture (NSC) and the Safety Conscious Work Environment (SCWE), including critical supporting programs and processes. In this regard, the CCA included coverage of:

- Cultural values, attitudes, behaviors and practices that have shaped and reinforced the organization's capabilities, infrastructure and environment for nuclear safety performance;
- The Safety Conscious Work Environment; and
- Employee attitudes and perceptions of the effectiveness of the Employee Concerns Program (ECP) and related processes.

The General Culture & Work Environment (GCWE) portion of the 2003 CCA focused on key elements of the general culture and work environment, including critical processes that are important to overall performance. In this regard, the CCA included coverage of:

- Cultural values, attitudes, behaviors and practices that have shaped and reinforced the organization's capabilities, infrastructure and environment for performance; and
- Assessment of general cultural, environmental or programmatic areas that affect organizational performance and that may have an inter-dependent relationship with the NSC.

The leadership, Management and Supervisory behaviors & practices (LMS) portion of the 2003 CCA focused on key areas of leadership, management and supervisory behaviors and practices. In this regard, the CCA included coverage of:

- Leadership behaviors and practices;
- Business/Resource Management behaviors and practices; and
- Personnel Management behaviors and practices.

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Approach

SYNERGY's cultural assessment approach relies heavily upon obtaining employee input as a measure of the values, attitudes, behaviors and practices that have shaped organizational culture and performance. In this regard, a comprehensive questionnaire was used to confidentially survey the workforce's opinions and to solicit suggestions for continuous improvement. All PSEG Nuclear employees and all long-term PSEG Nuclear contractors were afforded the opportunity to respond to the survey.

The information obtained through the survey provided the ability to identify organizational norms at various organizational levels and to identify differences within various employee demographic categories.

SYNERGY's CCA statistical methodology and cultural models, in conjunction with analysis of survey write-in comments, provided the bases for an integrated evaluation of employee attitudes and perceptions. This framework allowed SYNERGY to identify areas of strength and to develop suggestions for continuous improvement.

The CCA outputs are designed to support future interactions between management and employees to jointly develop solutions for any identified needs for cultural or performance improvements¹.

Sources of Input for the Assessment

2003 CCA Survey Questionnaire

The 2003 CCA survey questionnaire included a total of 168 multiple-choice question sub-parts and two opportunities to provide write-in comments.

Seventy-four (74) question sub-parts were related directly to the NSC:

- 45 question sub-parts related to NS Values, Behaviors and Practices
- 19 question sub-parts related to the SCWE
- 10 question sub-parts related to the effectiveness of the ECP

Forty-one (41) question sub-parts were related to the GCWE. Some of these were very closely linked to the NSC.

Fifty-three (53) question sub-parts were related to the LMS².

Write-In Comments

In order to obtain additional insights into issues that may be contributing to PSEG Nuclear's organizational culture (or to the culture within specific Functional Organizations), SYNERGY's assessment methodology included the use of two survey write-in comment opportunities.

¹ PSEG Nuclear has established a set of Action Teams to assist management in effectively responding to the CCA results, including the opportunities for improvement that have been identified. At PSEG Nuclear management's request, SYNERGY is working with these Teams to ensure that the CCA results and the bases for the identified opportunities for improvement are well understood.

² This includes three (3) Special Topics question sub-parts related to measuring progress in the areas of communications with the workforce and work prioritization/resource management.

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The insights derived from these this source have been integrated with the statistical survey results and were utilized in the identification and characterization of the opportunities for improvement presented in Section IX of this Report, “Opportunities and Suggestions for Improvement”.

In addition, the write-in comments provided by personnel from individual Functional Organizations that have been “Targeted” as organizational outliers have been evaluated and presented in Attachment 8 to this Report. This information should be useful in determining the underlying reasons for the lower ratings provided by these Organizations.

While significant effort has been applied by SYNERGY to extract the most significant and/or recurring themes from the write-in comments, it is nonetheless highly recommended that appropriate PSEG Nuclear personnel read the write-in comments. Occasionally, a significant issue or suggestion is identified in an individual comment that is not highlighted in the recurring themes.

In this regard, expurgated copies of the write-in comments have been provided to PSEG Nuclear management. The write-in comments were edited to protect the identity of those providing comments and to protect the identity of specific individuals that were identified in the comments.

Survey Participation

The overall 2003 CCA Survey response rate was 67.2% for the PSEG Nuclear Composite organization.

While lower than the industry average of 77% for surveys conducted by SYNERGY, this level of survey participation is more than sufficient to obtain meaningful insights and to reach conclusions.

Several individual Functional Organizations were identified as "Low Responding" organizations, based on survey participation rates < 40%. Results for most of these organizations are likely to be representative, but with lower confidence levels.

Organizational affiliation was provided by 97% of the survey participants, which is consistent with industry norms based on SYNERGY’s experience.

Write-in comments were provided by 36% of the survey participants, which is also consistent with industry norms based on SYNERGY’s experience. With few exceptions, the write-in comments were constructive in nature – focusing on the identification and characterization of perceived problems and opportunities for improvement.

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Overall Conclusions – Nuclear Safety Culture

PSEG Nuclear Composite Organization

The NSC Composite Cultural Indicator (CCI) for the PSEG Nuclear Composite organization is 3.73, which is in the low end of the “Good to Very Good” range. This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database. The approximate short-term trend for the NSC is +3%.

The PSEG Nuclear Composite rating of:

- Nuclear Safety Values, Behaviors and Practices is 3.54, which is in the low end of the “Good” range. This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database. The approximate short-term trend for the NS VB&P is +6%.
- The Safety Conscious Work Environment is 4.31, which is in the “Very Good to Excellent” range. This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database. The approximate short-term trend for the SCWE is +4%.
- The Employee Concerns Program is 3.41, which is in the “Adequate to Good” range. This rating places the Artificial Island Site in the 16th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database. The approximate short-term trend for the ECP is +1%.

Employee concerns regarding plant equipment and material condition – as manifested by long-standing or recurrent equipment problems, work-arounds and compensatory measures – resulted in lower ratings in several NS VB&P Sub-Dimensions. Employee ratings of the effectiveness of the Corrective Action Program/Notification Process were particularly low.

Several individual Functional Organizations provided significantly lower ratings of one or more key attributes of the SCWE. These Organizations are identified in Attachment 7 to this Report – “Detailed Analysis of the SCWE”.

Employee confidence in the Employee Concerns Program is in need of improvement. This is particularly the case for those individual Functional Organizations that provided significantly lower ratings of the ECP. These Organizations are identified in Section VII of this Report – “Functional Organization Analysis”.

NSC-related opportunities for improvement are included in Section IX of this Report. In addition, several PSEG Nuclear Functional Organizations have been “Targeted” for further evaluation by PSEG Nuclear management based upon lower NSC and/or SCWE ratings.

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Overall Conclusions – General Culture & Work Environment

PSEG Nuclear Composite Organization

The GCWE Composite Cultural Indicator (CCI) for the PSEG Nuclear Composite organization is 3.40, which is in the “Adequate to Good” range. This rating places the Artificial Island Site in the 26th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database. The approximate short-term trend for the GCWE is -3%.

Employee concerns regarding plant equipment and material condition – as manifested by long-standing or recurrent equipment problems, work-arounds and compensatory measures – affected ratings in several GCWE Dimensions, including “High Standards” and “Conduct of Work”.

GCWE areas with the lowest ratings include:

- Effectiveness of Work Management Processes (particularly the Maintenance Planning & Scheduling Process)
- General Communications
- Change Management
- Performance Recognition
- Performance Appraisal

GCWE-related opportunities for improvement are included in Section IX of this Report. In addition, several PSEG Nuclear Functional Organizations have been “Targeted” for further evaluation by PSEG Nuclear management based upon lower GCWE ratings.

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Overall Conclusions – Leadership, Management and Supervisory Behaviors & Practices

PSEG Nuclear Composite Organization

The LMS Composite Cultural Indicator (CCI) for the PSEG Nuclear Composite organization is 3.32, which is in the low end of the “Adequate to Good” range. This rating places the Artificial Island Site in the 33rd percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database. Approximate short-term trend information is not available.

The PSEG Nuclear Composite rating of:

- Leadership Behaviors and Practices is 3.19, which is in the low end of the “Adequate” range. This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database.
- Business/Resource Management Behaviors and Practices is 3.18, which is in low end of the “Adequate” range. This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database.
- Personnel Management Behaviors and Practices is 3.51, which is in the low end of the “Good” range. This rating places the Artificial Island Site in the 44th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database.

Employee concerns regarding plant equipment and material condition – as manifested by long-standing or recurrent equipment problems, work-arounds and compensatory measures – affected ratings in several LMS Sub-Dimensions, including “Confidence in Management”, “Management of Resources” and “Management of Systems & Processes”.

Additional LMS areas with low ratings include:

- Effectiveness of the Management of Change
- Effectiveness of Leadership in establishing and implementing Strategies & Plans and in providing Clear Direction for organizational success.

LMS-related opportunities for improvement are included in Section IX of this Report. In addition, several PSEG Nuclear Functional Organizations have been “Targeted” for further evaluation by PSEG Nuclear management based upon lower LMS ratings.

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II. ASSESSMENT METHODOLOGY

Overview

SYNERGY performed this assessment using information obtained through a survey questionnaire that was based upon standard Models developed by SYNERGY for use within the commercial nuclear power industry. Three primary Models³ were utilized, one each for the NSC, the GCWE and LMS. Survey write-in comments served to provide additional insights into the underlying cause-effect relationships of selected survey feedback.

Generally, the respondents completed the questionnaire anonymously during group meetings; however, opportunities were offered at the individual’s discretion to take the Survey at different times or locations. In either case, the completed forms were mailed directly to an independent data processing firm retained by SYNERGY to process the raw data inputs.

To assist SYNERGY in interpreting the response data, various demographic and organizational information was requested but not required; e.g. positions, worker categories, years of service and organizational affiliation. The representation of organizational affiliation provided the capability to isolate specific organizational strengths and weaknesses.

The survey questionnaire, and the associated write-in comments were complementary in establishing a high degree of confidence that important issues were identified as these apply PSEG Nuclear-wide and to specific PSEG Nuclear major organizations and sub-organizations. The information obtained has been integrated in the development of key findings, opportunities for improvement and conclusions.

Survey Analysis Methods

The 2003 CCA survey questionnaire included 40 multiple-choice questions with 168 total sub-parts. Two additional questions provided the opportunity for write-in comments.

The survey questions were generally designed as “positive” statements to which the respondents rated their degree of agreement or disagreement. A number of questions asked for ratings of “adequacy” of an area of performance or the environment. A few questions requested a “yes” or “no” response.

The following response scales were generally utilized:

Fully agree (5)	Strongly agree (4)	Generally agree (3)	Disagree (2)	Strongly Disagree (1)
and				
Excellent (5)	Very good (4)	Adequate (3)	Less-than-adequate (2)	Inadequate (1)

³ The models are sub-divided into ‘Dimensions’ and ‘Sub-Dimensions’ that explore specific attributes; e.g. the Safety Conscious Work Environment is a Dimension under the NSC model, ‘Indicators & Precursors’ is a Sub-dimension and ‘supervisory receptivity’ is an attribute.

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Thus, the response scales were asymmetric and anchored about a numerical mid-point of “3”, with scores greater than 3.00 representing either a “positive or adequate” response and less than 3.00 representing either a “negative or less-than-adequate” response.

SYNERGY computed means and standard deviations for each question using the response distributions represented by the ordinal values associated with the above response scales. Weighted mean value scores were then developed for the "question sets" that constitute the key elements of SYNERGY's cultural models, i.e., Sub-Dimensions, Dimensions, and Models -- represented by Composite Cultural Indicators⁴ (CCI).

The analysis looked beyond statistical means to identify any skewing of the employee response data towards extremes, particularly for the “negative” side of the response distributions. Negative responses represent the summation of “disagree (2)” and “strongly disagree (1)” or “less-than-adequate (2)” and “inadequate (1)” responses, in accordance with the above five point response scales. While an organization’s mean value response may appear in an acceptable range, high percentages of negative responses may provide an indication of stratification or negative “pockets” (defined as greater than a 10% negative response rate for a NSC Dimension and as greater than a 20% negative response rate for a GCWE or LMS Dimension). Such locales may require further validation or special attention to correct underlying weaknesses or to fully engage the employees.

Rating Conventions

Correlations between numerical mean value scores and the rating system utilized by SYNERGY are presented below:

<u>Mean Value Range</u>	<u>Rating</u>
> 4.50	Excellent
4.21 to 4.50	Very Good to Excellent
3.91 to 4.20	Very Good
3.71 to 3.90	Good to Very Good
3.51 to 3.70	Good
3.31 to 3.50	Adequate to Good
3.16 to 3.30	Adequate
3.00 to 3.15	Nominally Adequate
2.85 to 2.99	Nominally Less than Adequate
2.50 to 2.84	Less than Adequate
< 2.50	Significantly Less than Adequate

⁴ The Sub-Dimensions and Dimension metrics are calculated by weighting each assigned question. CCIs for the NSC, GCWE and LMS are calculated by weighting each Dimension in the respective cultural models. SYNERGY specifies weighting factors based upon industry experience on the significance to the culture and work environment.

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Industry Comparisons & Benchmarking

General Background

SYNERGY has developed an extensive industry database through the conduct of more than 80 cultural assessments within the nuclear industry, including more than 35 commercial nuclear power plant Sites and more than 60 commercial nuclear power plants. SYNERGY continuously updates this industry database to reflect the results of the most recent assessment for each Site.

In order to ensure that Industry Comparisons reflect the current state of industry performance, SYNERGY utilizes assessment results for the previous two years. Accordingly, the Industry Comparisons made in this assessment include recent results for 21 commercial nuclear power Sites. The Sites included in this Industry Comparison reflect a representative spectrum of performance within the commercial nuclear power industry.

SYNERGY only provides industry comparison information for nuclear power plant Sites. In this regard, each Site typically includes Plant Organizations, Engineering Organizations, Assessment Organizations, and Business Support Organizations. PSEG Nuclear is currently organized as a three-unit Site that includes the two Salem Plant units and the one Hope Creek Plant unit. This is a somewhat atypical organizational arrangement compared to other commercial nuclear power plant Sites.

Accordingly, for the purpose of establishing meaningful comparisons and benchmarking with industry data, SYNERGY considered the entire PSEG Nuclear organization as representing the “Artificial Island Site”.

Trends

Since this is the first CCA that SYNERGY has conducted for PSEG Nuclear, very limited trending information is available. It is limited to information that can be derived from 7 survey question sets that requested responses based upon “today” and “a year ago”.

These question sets, both individually and collectively, can be utilized to identify approximate trends for the following key cultural parameters:

- The Nuclear Safety Culture
- Nuclear Safety Values, Behaviors & Practices
- The Safety Conscious Work Environment
- Employee Confidence in the ECP
- The General Culture & Work Environment

Such trends should be considered only as an indicator of “current momentum”.

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III. SURVEY PARTICIPATION

As shown in Figure 1 below, the 2003 CCA Survey response rate for the PSEG Nuclear Composite organization was approximately 67%, which is more than sufficient to obtain meaningful insights and to reach conclusions⁵.

The PSEG Nuclear Composite organization survey participation rate was below the industry average of 77% for surveys conducted by SYNERGY.

Figure 1

ORGANIZATION	POTENTIAL PARTICIPANTS	# OF SURVEY PARTICIPANTS	RESPONSE %
Site Operations Organizations	1464	877	59.9%
Engineering & Technical Support Organizations	381	309	81.1%
Nuclear Assessment Organizations	66	63	95.5%
Business Support Organizations	151	89	58.9%
CNO Staff & Support Organizations	15	12	80.0%
PSEG Nuclear Composite	2077	1395	67.2%

The survey participation rate was 72.3% for PSEG employees and 26.0% for PSEG Contractors. The participation rate for Union Employees was 55.6%.

Organizational affiliation was provided by 97% of the survey participants, which is consistent with industry norms based on SYNERGY’s experience.

Write-in comments were provided by 36% of the survey participants, which is also consistent with industry norms based on SYNERGY’s experience. The distribution of the write-in comments was generally consistent with individual organization survey participation rates. With few exceptions, the write-in comments were constructive in nature – focusing on the identification and characterization of perceived problems and opportunities for improvement.

As discussed earlier, all employees and long-term contractors were offered an opportunity to respond to the survey. Therefore, the CCA surveying strategy did not include reliance on random sampling techniques. Ideally, the objective was to obtain 100% participation (vs. setting statistical criteria for selecting a sample). Since the actual response rates were lower than 100%, the survey yielded an implicit ‘sample’ of the PSEG Nuclear population. The degree of randomness of this ‘sample’ is unknown. Given this uncertainty, the CCA objective was to

⁵ Detailed results for PSEG Nuclear survey participation are provided in Attachment 12 to this Report.

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assure that the response was representative enough to draw qualitative conclusions at various organizational levels and for key demographic categories.

The following individual Functional Organizations have been identified as "Low Responding" organizations, based on survey participation rates < 40%. Results for most of these organizations are likely to be representative, but with somewhat lower confidence levels.

- Other Facilities Organization (18%)
- Other Station Support Organization (21%)
- Hope Creek Electrical/I&C Maintenance (26%)
- Salem Mechanical Maintenance (29%)
- Salem 12 Hr/WIN Maintenance (29%)
- Salem Electrical/I&C Maintenance (32%)
- Salem Other Operations (36%)
- Hope Creek Radiation Protection (36%)
- Hope Creek Other Operations (37%)
- Hope Creek 12 Hr/WIN Maintenance (37%)
- Security (37%)
- Supply Chain Organizations (38%)

The reasons for the lower survey participation rates in these organizations have not been clearly identified. The most likely cause is that sufficient time was not set aside (dedicated) during the normal workday for personnel in these organizations to take the survey.

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IV. KEY NUCLEAR SAFETY CULTURE RESULTS⁶

PSEG Nuclear Composite NSC Rating and Approximate Trend

The NSC Composite Cultural Indicator (CCI) for the PSEG Nuclear Composite organization is 3.73, which is in the low end of the “Good to Very Good” range.

This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database.

The approximate short-term trend for the NSC is +3%.

PSEG Nuclear Composite NSC Cultural Model Dimension Ratings and Approximate Trends

The PSEG Nuclear Composite rating of:

- Nuclear Safety Values, Behaviors and Practices is 3.54, which is in the low end of the “Good” range. This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database. The approximate short-term trend for the NS VB&P is +6%.
- The Safety Conscious Work Environment is 4.31, which is in the “Very Good to Excellent” range. This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database. The approximate short-term trend for the SCWE is +4%.
- The Employee Concerns Program is 3.41, which is in the “Adequate to Good” range. This rating places the Artificial Island Site in the 16th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database. The approximate short-term trend for the ECP is +1%.

⁶ The following information is also presented as color-coded “Windows” tables in Attachment 2 to this Report. In addition, Attachment 2 contains color-coded windows for the NSC and its dimensions/sub-dimensions for the PSEG Nuclear Major Functional Organizations. Similar information is provided for each individual PSEG Nuclear Functional Organization in the Appendices to this Report.

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NSC Cultural Model Sub-Dimensions Ratings

NS Values, Behaviors and Practices

PSEG Nuclear Composite organization ratings for the NS VB&P Dimension and its six sub-Dimensions are presented in Figure 3.

**FIGURE 3
PSEG Nuclear Composite Ratings
NS Values, Behaviors and Practices Sub-Dimensions**

Sub-Dimensions	PSEG Nuclear Rating	Rating Description
NS VB&P Dimension Rating	3.54	Good
Nuclear Safety is Top Priority	3.59	Good
Operational Nuclear Safety	3.63	Good
Identification of Potential NS Issues	3.62	Good
Timely Resolution of Identified NS Issues	3.35	Adequate to Good
Effective Resolution of Identified NS Issues	3.27	Adequate
Continuous Improvement of NS Performance	3.71	Good to Very Good

It should be noted that NS VB&P ratings < 3.50 indicate a need for improvement and that ratings < 3.30 indicate a significant need for improvement.

Employee concerns regarding plant equipment and material condition – as manifested by long-standing or recurrent equipment problems, work-arounds and compensatory measures – resulted in lower ratings in several NS VB&P Sub-Dimensions. Employee ratings of the effectiveness of the Corrective Action Program/Notification Process were particularly low.

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Safety Conscious Work Environment

PSEG Nuclear Composite ratings for the SCWE Dimension and its two sub-Dimensions are presented in Figure 4.

**FIGURE 4
PSEG Nuclear Composite Ratings
Safety Conscious Work Environment Sub-Dimensions**

Sub-Dimensions	PSEG Nuclear Rating	Rating Description
SCWE Dimension Rating	4.31	Very Good to Excellent
Indicators & Precursors of a Potentially Chilled Work Environment	4.17	Very Good
Demonstrated Willingness to Take Appropriate Action	4.45	Very Good to Excellent

It should be noted that there are several individual Functional Organizations that provided significantly lower ratings of one or more key attributes of the SCWE. These Organizations are identified in Attachment 7 to this Report – “Detailed Analysis of the SCWE”.

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Employee Concerns Program

PSEG Nuclear Composite ratings for the ECP Dimension and its three sub-Dimensions are presented in Figure 5.

**FIGURE 5
PSEG Nuclear Composite Ratings
Employee Concerns Program Sub-Dimensions**

Sub-Dimensions	PSEG Nuclear Rating	Rating Description
ECP Dimension Rating	3.41	Adequate to Good
Acceptable Alternative Path	3.51	Good
Overall Confidence Rating	3.27	Adequate
Bases for Confidence	3.43	Adequate to Good

It should be noted that employee confidence in the Employee Concerns Program needs improvement. This is particularly the case for those individual Functional Organizations that provided significantly lower ratings of the ECP. These Organizations are identified in Section VII of this Report – “Functional Organization Analysis”.

Attachment 16 to this Report provides “SYNERGY’s Perspective on the Key Attributes of Effective Employee Concerns Programs”.

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Individual Survey Question Responses – NSC

A complete listing of survey questions with the PSEG Nuclear Composite organization's ratings sorted by “most to least positive mean value ratings” is provided in Attachment 6 to this Report⁷.

Similar information has been provided for each PSEG Nuclear Major Organization in the Appendices to this Report and on CD-ROM for each individual PSEG Nuclear Functional Organization.

NSC Areas of Relative Strength

The information presented below is for the PSEG Nuclear Composite organization.

Areas of relative strength within the NSC, based upon the PSEG Nuclear Composite organization's responses to the individual survey questions, are presented below.

The following NS VB&P and ECP-related survey questions received mean value ratings of > 3.80 and had negative response pockets < 10%. Mean value ratings and negative response %s are shown in parentheses.

- Nuclear Safety is the first and over-riding priority at our Site. (4.09, 4%)
- Within my Functional Organization, we have expectations and standards for Nuclear Safety that are effectively communicated and reinforced. (3.95, 6%)
- At our Site, we conduct operations, maintenance and modifications in accordance with the licensing and design bases. (3.91, 2%).
- Lack of prior responsiveness by my supervisor is not having an adverse impact on my willingness to identify and pursue resolution of potential Nuclear Safety issues or concerns. (3.86, 8%)
- Within my Functional Organization, we place importance upon improving our Nuclear Safety performance. (3.81, 8%)

The following SCWE-related survey questions received mean value ratings of > 4.10 and had negative response pockets < 5%. Mean value ratings and negative response %s are shown in parentheses.

- If I identified a potential Nuclear Safety issue or concern (including a degraded condition that could adversely affect Nuclear Safety), I would inform my supervisor, and/or document the issue or concern (e.g., by initiating an Action Request). (4.55, 0.8%)
- Employees are genuinely encouraged to identify potential Nuclear Safety issues or concerns (including degraded conditions that could adversely affect Nuclear Safety). (4.17, 2.4%)
- Raising and pursuing resolution of potential Nuclear Safety issues or concerns is favorably received by my immediate supervisor. (4.16, 3.5%)

⁷ In addition to the complete listing of survey questions, sorted listings (i.e., NSC, SCWE, ECP, GCWE and LMS questions) are provided for the PSEG Nuclear Composite organization.

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NSC Areas of Relative Weaknesses

The following NS VB&P-related survey questions received mean value ratings of <3.30. Mean value ratings and negative response %s are shown in parentheses.

- I am confident that the Corrective Action Process (e.g. the Notification system) will ensure that potential Nuclear Safety problems are addressed in a timely manner. (2.95, 31%)
- I am confident that the Corrective Action Process (e.g. the Notification system) will ensure that potential Nuclear Safety problems are resolved in an effective manner. (2.97, 29%)
- At our Site/Location, we pursue resolution of important and long-standing equipment and materiel problems that could adversely affect Nuclear Safety. (3.08, 25%)
- I am confident that the Corrective Action Process (e.g. the Notification system) will ensure that potential Nuclear Safety problems are investigated sufficiently to define corrective actions that address the root cause. (3.15, 22%)
- With respect to important issues or activities (especially those that have the potential to adversely affect Nuclear Safety), management appropriately exercises accountability and follow-up for associated planned actions. (3.19, 23%)
- I am confident that our Site/Location management is making well thought-out decisions in the allocation of resources to assure that Nuclear Safety is maintained. (3.21, 23%)
- Our Site Senior Management Team ensures that the actions taken to address nuclear safety related issues, including issues associated with potentially degraded plant conditions, are defined and implemented in a timely manner. (3.25, 20%)
- I am confident that the Corrective Action Process (e.g. the Notification system) will ensure that potential Nuclear Safety problems are prioritized appropriately. (3.26, 20%)
- Workload is NOT having an adverse impact on our ability to effectively resolve potential Nuclear Safety issues/concerns, including degraded conditions. (3.29, 23%)
- With respect to important issues or activities (especially those that have the potential to adversely affect Nuclear Safety), management actively seeks input (including critical feedback) from both internal and external sources. (3.29, 19%)

The following NS VB&P-related survey questions received mean value ratings of <3.50. Mean value ratings and negative response %s are shown in parentheses.

- Within my Functional Organization, we perform line organization self-assessments that are effective in improving our Nuclear Safety performance. (3.30, 20%)
- Overall, the influence of Site/Location Senior Management in promoting our Nuclear Safety priorities (i.e. walking-the-talk & leading by example) is _____ today. (3.33, 19%)
- At our Site/Location the overall identification and resolution of potential Nuclear Safety issues (through all mechanisms combined) is _____ today. (3.37, 12%)
- Our Site Senior Management Team ensures that the actions taken to address nuclear safety related issues, including issues associated with potentially degraded plant conditions, are appropriately conservative. (3.37, 15%)

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- With respect to important issues or activities (especially those that have the potential to adversely affect Nuclear Safety), management actively seeks first-hand information from those personnel who are intimately involved with the issues/activities. (3.38, 19%)
- With regard to Nuclear Safety issues/concerns (including degraded conditions) supervisors and management in my Functional Organization ensure that validated issues or concerns are resolved in an effective and timely manner. (3.41, 17%)
- At our Site/Location, we maintain documentation (e.g., procedures, drawings and calculations) consistent with operational practices and the physical plant configuration. (3.42, 13%)
- Overall, the influence of management in my Functional Organization in promoting our Nuclear Safety priorities (i.e. walking-the-talk & leading by example) is _____ today. (3.45, 16%)
- Workload is NOT having an adverse impact on our ability to identify potential nuclear safety issues/concerns. (3.46, 18%)
- At our Site/Location, we anticipate operational risks associated with planned work activities and take appropriate precautions. (3.46, 11%)
- The following issues are NOT currently having an adverse impact on my willingness to identify and pursue resolution of potential Nuclear Safety issues or concerns: Lack of prior responsiveness by the CAP (i.e., the Notification Process). (3.47, 18%)

The following ECP-related survey questions received mean value ratings of <3.30. Mean value ratings and negative response %s are shown in parentheses.

- I am confident that issues or concerns reported through the Employee Concerns Program will be appropriately resolved (3.26, 22%)
- Overall, my confidence in the Employee Concern Program is ____ today. (3.27, 21%)
- I believe that our Employee Concerns Program is generally viewed as an acceptable method to identify potential Nuclear Safety issues or concerns. (3.28, 22%)

The following ECP-related survey questions received mean value ratings of <3.50. Mean value ratings and negative response %s are shown in parentheses.

- I believe that our Employee Concerns Program has a high degree of management support. (3.36, 18%)
- I am confident that issues or concerns reported through the Employee Concerns Program will be treated in a manner that maintains confidentiality to the extent practicable. (3.44, 19%)
- I am confident that issues or concerns reported through the Employee Concerns Program will be thoroughly investigated. (3.48, 15%)
- I believe that our Employee Concerns Program is sufficiently visible and known to the workforce. (3.48, 18%)

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The following SCWE-related survey questions received mean value ratings of < 3.80 and/or had negative response pockets > 10%. Mean value ratings and negative response %s are shown in parentheses.

- The following issues are NOT currently having an adverse impact on my willingness to identify and pursue resolution of potential NS issues or concerns: Concerns about receiving a negative reaction from my management. (3.64, 15%)
- The following issues are NOT currently having an adverse impact on my willingness to identify and pursue resolution of potential NS issues or concerns: Concerns about being viewed as uncooperative, a complainer or someone who is resistant to change. (3.68, 14%)
- Overall, the environment at our Site/Location as it affects my willingness and likelihood of reporting potential Nuclear Safety issues is _____ today. (3.74, 6%)
- The following issues are NOT currently having an adverse impact on my willingness to identify and pursue resolution of potential NS issues or concerns: Concerns about receiving a negative reaction from my supervisor. (3.77, 11%)
- With regard to Nuclear Safety issues/concerns (including degraded conditions), supervisors and management in my Functional Organization value workers who identify and pursue resolution of potential issues or concerns. (3.79, 8%)
- Do you know someone who, during the past year, has experienced a negative reaction from supervision or management for having raised an issue or concern related to Nuclear Safety? (4.19, **20%**)

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V. KEY GENERAL CULTURE & WORK ENVIRONMENT RESULTS⁸

PSEG Nuclear Composite
GCWE Rating and Approximate Trend

The GCWE Composite Cultural Indicator (CCI) for the PSEG Nuclear Composite organization is 3.40, which is in the “Adequate to Good” range.

This rating places the Artificial Island Site in the 26th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database.

The approximate short-term trend for the GCWE is -3%.

⁸ The following information is also presented as color-coded “Windows” tables in Attachment 3 to this Report. In addition, Attachment 3 contains color-coded windows for the GCWE and its dimensions/sub-dimensions for the PSEG Nuclear Major Functional Organizations. Similar information is provided for each individual PSEG Nuclear Functional Organization in the Appendices to this Report.

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**PSEG Nuclear Composite
GCWE Cultural Model Dimension Ratings**

The PSEG Nuclear Composite organization's ratings of the GCWE CCI and each of its thirteen Dimensions are presented in Figure 6.

**FIGURE 6
PSEG Nuclear Composite Ratings
GCWE Model Dimensions**

DIMENSION	PSEG Nuclear Rating	Rating Description
GCWE CCI OVERALL RATING	3.40	Adequate to Good
High Standards	3.41	Adequate to Good
Focus on Performance	3.51	Good
Continuous Improvement	3.70	Very Good
Conduct of Work	3.40	Adequate to Good
Teamwork	3.65	Good
Employee Involvement	3.59	Good
Trust & Respect	3.90	Good to Very Good
General Communications	2.83	Less than Adequate
Change Management	2.87	Nominally Less than Adequate
Training & Development	3.23	Adequate
Performance Recognition	2.87	Nominally Less than Adequate
Performance Appraisal	3.07	Nominally Adequate
Overall Personal Satisfaction/Morale	3.29	Adequate

It should be noted that GCWE ratings < 3.15 indicate a need for improvement and that ratings < 3.00 indicate a significant need for improvement.

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Individual Survey Question Responses – GCWE

A complete listing of survey questions with the PSEG Nuclear Composite organization's ratings sorted by “most to least positive mean value ratings” is provided in Attachment 6 to this Report⁹.

Similar information has been provided for each PSEG Nuclear Major Organization in the Appendices to this Report and on CD-ROM for each individual PSEG Nuclear Functional Organization.

GCWE Areas of Relative Strength

The information presented below is for the PSEG Nuclear Composite organization.

Key areas of relative strength within the GCWE, based upon the PSEG Nuclear Composite organization's responses to the individual survey questions, are presented below.

The following GCWE-related survey questions received mean ratings of > 3.80 and had negative response pockets < 10%. Mean value ratings and negative response %s are shown in parentheses.

- My immediate supervisor treats me with dignity and respect. (3.97, 9%)
- Through the daily activities in my Work Group, we strive to improve our performance. (3.92, 5%)
- Through the daily activities in my Work Group, we are self-critical and have questioning attitudes. (3.91, 3%)
- Through the daily activities in my Work Group, we obtain supervisory/management input before taking actions on matters beyond our normal work procedures/processes. (3.91, 4%)
- Within my Work Group, we have an environment where people feel safe to voice their opinion and ideas. (3.90, 9.6%)
- Within my Functional Organization, we have high standards and apply these in the conduct of our day-to-day activities. (3.89, 4%)
- Within my Functional Organization, we place importance on performance and results. (3.89, 6%)
- With respect to my work assignment, I obtain a personal sense of satisfaction from my work. (3.89, 9%)
- Through the daily activities in my Work Group, we are quality conscious and pay attention to details. (3.87, 5%)
- Through the daily activities in my Work Group, we identify our own problems. (3.82, 5%)

⁹ In addition to the complete listing of survey questions, sorted listings (i.e., NSC, SCWE, ECP, GCWE and LMS questions) are provided for the PSEG Nuclear Composite organization.

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GCWE Areas of Relative Weaknesses

The following GCWE-related survey questions received mean value ratings of <3.00. Mean value ratings and negative response %s are shown in parentheses.

- Within my Functional Organization, we have an effective work management process (2.53, 51%)
- Within my Functional Organization, we are effective in developing people. (2.69, 44%)
- I am satisfied with communications regarding priorities, as used in decisions and resource allocation. (2.76, 40%)
- I am satisfied with communications regarding future plans for our Site/Location. (2.78, 39%)
- Within my Functional Organization, we are effective in recognizing performance and accomplishments. (2.87, 36%)
- Within my Functional Organization, we are effective in planning and implementing changes in the way we do business. (2.87, 37%)
- Within my Functional Organization, we have effective training on the technical/functional aspects of our jobs. (2.88, 35%)
- I am satisfied with communications regarding annual goals and performance objectives for our Site/Location. (2.99, 28%)

The following GCWE-related survey questions received mean value ratings of <3.15. Mean value ratings and negative response %s are shown in parentheses.

- I am satisfied with communications regarding the competitive business environment and what it means to our Site/Location. (3.01, 27%)
- Workload is NOT having an adverse impact on our ability to maintain plant material condition or reliability (3.01, 32%)
- My overall personal experience and morale as a worker, based upon factors such as my personal growth opportunities, rewards, and the professional working environment is _____ today. (3.06, 30%)
- As an MAST employee, I feel that within my Work Group we conduct effective personnel performance appraisals. (3.07, 29%)
- Workload is NOT having an adverse impact on our ability to assure the quality of our work products. (3.12, 27%)

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**VI. KEY LEADERSHIP, MANAGEMENT AND SUPERVISORY
BEHAVIORS & PRACTICES RESULTS¹⁰**

**PSEG Nuclear Composite
LMS Rating**

The LMS Composite Cultural Indicator (CCI) for the PSEG Nuclear Composite organization is 3.32, which is in the low end of the “Adequate to Good” range.

This rating places the Artificial Island Site in the 33rd percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database.

There is no information available regarding the approximate short-term trend.

**PSEG Nuclear Composite
LMS Cultural Model Dimension Ratings**

The PSEG Nuclear Composite rating of:

- Leadership Behaviors and Practices is 3.19, which is in the low end of the “Adequate” range. This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database.
- Business/Resource Management Behaviors and Practices is 3.18, which is in low end of the “Adequate” range. This rating places the Artificial Island Site in the 11th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database.
- Personnel Management Behaviors and Practices is 3.51, which is in the low end of the “Good” range. This rating places the Artificial Island Site in the 44th percentile of the commercial nuclear power plant Sites within SYNERGY’s industry database.

The PSEG Nuclear Composite organization's ratings of the LMS CCI and each of its three Dimensions and fourteen sub-Dimensions are presented in Figure 7.

¹⁰ The following information is also presented as color-coded “Windows” tables in Attachment 4 to this Report. In addition, Attachment 4 contains color-coded windows for the LMS and its dimensions/sub-dimensions for the PSEG Nuclear Major Functional Organizations. Similar information is provided for each individual PSEG Nuclear Functional Organization in the Appendices to this Report.

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**FIGURE 7
LMS Model Dimensions and Sub-Dimensions**

DIMENSION/SUB-DIMENSION	Rating	Rating Description
LMS OVERALL RATING	3.32	Adequate to Good
Leadership Behaviors & Practices	3.19	Adequate
<i>Provide Direction</i>	3.14	Nominally Adequate
<i>Build Confidence in Management</i>	3.09	Nominally Adequate
<i>Build Trust In Management</i>	3.37	Adequate to Good
<i>Set a Good Example</i>	3.23	Adequate
Business/Resource Management Skills & Practices	3.18	Adequate
<i>Make Decisions/Solve Problems</i>	3.43	Adequate to Good
<i>Manage Change</i>	2.95	Nominally Less than Adequate
<i>Manage Resources</i>	3.09	Nominally Adequate
<i>Manage Systems & Processes</i>	3.02	Nominally Adequate
Personnel Management Behaviors & Practices	3.51	Good
<i>Communications with the Workforce</i>	3.43	Adequate to Good
<i>Openness & Receptivity</i>	3.73	Good to Very Good
<i>Provide a Supportive Work Environment</i>	3.37	Adequate to Good
<i>Performance Management</i>	3.41	Adequate to Good
<i>Personnel Training & Development</i>	3.58	Good
<i>Promote Employee Involvement</i>	3.53	Good

It should be noted that LMS ratings < 3.15 indicate a need for improvement and that ratings < 3.00 indicate a significant need for improvement.

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Individual Survey Question Responses -- LMS

A complete listing of survey questions with the PSEG Nuclear Composite organization's ratings sorted by "most to least positive mean value ratings" is provided in Attachment 6 to this Report¹¹.

Similar information has been provided for each PSEG Nuclear Major Organization in the Appendices to this Report and on CD-ROM for each individual PSEG Nuclear Functional Organization.

LMS Areas of Relative Strength

The information presented below is for the PSEG Nuclear Composite organization.

Key areas of relative strength within the LMS, based upon the PSEG Nuclear Composite organization's responses to the individual survey questions, are presented below.

The following LMS-related survey questions received mean value ratings of > 3.75 and had negative response pockets $< 15\%$. Mean value ratings and negative response %s are shown in parentheses.

- With respect to my work assignment, I understand how my work adds value to the Site. (4.12, 3%)
- With respect to my work assignment, I understand my assigned responsibilities and performance expectations. (4.03, 4%)
- My immediate supervisor encourages workers to identify and discuss problems. (3.95, 8%)
- My immediate supervisor encourages cooperation and teamwork. (3.93, 8%)
- My immediate supervisor makes it comfortable to approach him/her with problems. (3.93, 10%)
- My immediate supervisor is straightforward, open and honest in his/her communications and interactions with employees. (3.90, 9%)
- My immediate supervisor is sufficiently visible and accessible to employees. (3.89, 7%)
- My immediate supervisor has earned my trust. (3.82, 14%)
- My immediate supervisor takes positive action to address problems. (3.78, 10%)
- My immediate supervisor utilizes my input as appropriate. (3.78, 10%)

¹¹ In addition to the complete listing of survey questions, sorted listings (i.e., NSC, SCWE, ECP, GCWE and LMS questions) are provided for the PSEG Nuclear Composite organization.

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LMS Areas of Relative Weaknesses

The following LMS-related survey questions received mean value ratings of < 3.00. Mean value ratings and negative response %s are shown in parentheses.

- Our Site Senior Management Team is sufficiently visible and accessible to employees. (2.72, 41%)
- Within my Functional organization, during the past 18 months, we have made progress in improving the effectiveness of work prioritization and resource management. (2.78, 41%)
- Our Site Senior Management Team demonstrates teamwork. (2.84, 34%)
- Our Site Senior Management Team provides effective leadership in ensuring that necessary changes are being made. (2.86, 35%)
- Our Site Senior Management Team communicates sufficiently with the workforce. (2.89, 34%)
- Our Site Senior Management Team is open and honest in their communications and interactions with the workforce. (2.94, 32%)
- Our Site Senior Management Team sets a positive example by practicing our Power Behaviors. (2.95, 29%)
- Our Site Senior Management Team has established a clear strategy and a sense of direction for our success. (2.95, 32%)
- Within my Functional organization, during the past 18 months, we have made progress in improving the effectiveness of communications between management and the workforce. (2.99, 32%)

The following LMS-related survey questions received mean value ratings of < 3.15. Mean value ratings and negative response %s are shown in parentheses.

- Supervisors and management within my Functional Organization are effective at obtaining employee input, buy-in and ownership up-front before implementing significant changes. (3.00, 32%)
- Management within my Functional Organization develops plans that create confidence that our goals will be achieved. (3.03, 30%)
- Supervisors and management within my Functional Organization are effective at building people's pride, self-esteem and commitment to the organization (3.06, 29%)
- Supervisors and management within my Functional Organization are effective at dealing with human performance problems. (3.07, 27%)
- Management within my Functional Organization effectively communicates the bases for changes in programs, policies and procedures. (3.08, 27%)
- Supervisors and management within my Functional Organization are effective at prioritizing our workload. (3.12, 25%)
- Supervisors and management within my Functional Organization are effective at managing conflicts and disagreements. (3.13, 24%)
- Supervisors and management within my Functional Organization are effective at holding people appropriately accountable for performance and results. (3.13, 25%)

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VII. FUNCTIONAL ORGANIZATION ANALYSIS¹²

NSC Ratings

Functional Organizations With Relatively High Ratings for
NSC, NS VB&P, SCWE and ECP

Information regarding the individual PSEG Nuclear Functional Organizations that provided the highest ratings of the NSC and its key components is presented in the Figure 8 below.

**FIGURE 8
PSEG Nuclear Functional Organizations with Relatively High NSC Ratings**

Organization	Overall NSC	NS VB&P	SCWE	ECP
PSEG Nuclear Composite	3.73	3.54	4.31	3.41
Eng. Services/Document Control	4.30	4.19	4.69	
Human Resources	4.15	4.00	4.57	
CNO Staff & Support	4.15	4.01	4.53	
IT/TI	4.10	3.95	4.56	
Other Nuclear Assessment	4.09	3.87	4.70	
Financial Organizations	4.08	3.91	4.60	
Field Engineering	4.00	3.84		3.67
Salem Other Operations	3.99	3.81	4.62	
Security	3.98			3.82
Learning Services	3.98	3.80		3.94
ET&S Projects	3.95	3.76		3.68
Nuclear Licensing	3.95	4.57	4.57	
Technical Training	3.93	3.72	4.55	3.83
Hope Creek Systems Eng.	3.92	3.73	4.54	
Emergency Preparedness	3.92		4.55	3.91
Station Support	3.92	3.74		3.72
Quality Assessment			4.54	
Refueling Outage				3.70
Fire Protection				3.62
Maintenance Planning				3.59

¹² Cultural Metric Rating information for all PSEG Nuclear organizations and demographic categories is provided in Attachment 9.

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Functional Organizations With Relatively Low NSC, SCWE and ECP Ratings

Information regarding the individual PSEG Nuclear Functional Organizations that provided the lowest ratings of the NSC and its key components is presented in the Figure 9 below.

**FIGURE 9
PSEG Nuclear Functional Organizations with Relatively Low NSC Ratings**

Organization	Overall NSC	NS VB&P	SCWE	ECP
PSEG Nuclear Composite	3.73	3.54	4.31	3.41
Salem Chemistry	3.20	2.96	3.97	2.74
Hope Creek Shift Operations	3.27	3.05	4.01	2.63
On-Line/Cycle Maintenance	3.28	3.10	3.87	2.83
Salem Radiation Protection	3.28	3.11	3.83	2.92
Salem Mechanical Maintenance	3.29	3.07	4.01	2.81
Hope Creek Chemistry	3.34	3.13	4.03	2.80
HC Mechanical Maintenance	3.42	3.25	3.98	3.00
Salem 12hr/WIN Maintenance	3.45	3.19		3.17
YARD/Nuclear Worker	3.52		3.79	
Salem Shift Operations	3.53	3.28		3.12
HC 12hr/WIN Maintenance	3.54			3.10
HC Radiation Protection		3.35		
Other Training Organization		3.36		3.18
Warehouse			3.96	
HC Electrical/I&C Maintenance			4.09	3.01
SMART/Custodial/HVAC			4.10	
Salem Other Maintenance				3.17

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GCWE and LMS Ratings

Functional Organizations With Relatively High Ratings for GCWE and/or LMS

Information regarding the individual PSEG Nuclear Functional Organizations that provided the highest ratings of the GCWE and/or LMS is presented in the Figure 10 below.

**FIGURE 10
PSEG Nuclear Functional Organizations
With Relatively High GCWE/LMS Ratings**

Organization	Overall GCWE	Overall LMS
PSEG Nuclear Composite	3.40	3.32
Eng. Services/Document Control	4.16	4.18
Learning Services	4.13	4.00
CNO Staff & Support	4.06	3.91
Human Resources	3.87	3.78
Other Nuclear Assessment	3.79	3.79
Security	3.79	3.75
Field Engineering	3.78	3.80
Financial Organizations	3.69	3.65
Salem Other Operations	3.68	3.64
IT/TI	3.68	3.70
Nuclear Licensing	3.64	3.64
ET&S Programs	3.60	3.54
ET&S Projects	3.59	3.50
ET&S Fuels/Reactor Engineering	3.58	
Design Engineering	3.57	3.56
Refueling Outage		3.64
SMART/Custodial/HVAC		3.49

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Functional Organizations With Relatively Low Ratings for GCWE and/or LMS

Information regarding the individual PSEG Nuclear Functional Organizations that provided the lowest ratings of the GCWE and/or LMS is presented in the Figure 11 below.

FIGURE 11
PSEG Nuclear Functional Organizations
With Relatively Low GCWE/LMS Ratings

Organization	Overall GCWE	Overall LMS
PSEG Nuclear Composite	3.40	3.32
On-Line/Cycle Maintenance	2.69	2.53
Salem Chemistry	2.82	2.68
Salem Mechanical Maintenance	2.83	2.92
Hope Creek Chemistry	2.97	2.89
Hope Creek Shift Operations	2.98	2.86
Salem 12hr/WIN Maintenance	2.98	2.79
Salem Radiation Protection	3.03	2.89
HC Mechanical Maintenance	3.04	2.92
HC 12hr/WIN Maintenance	3.06	2.99
Salem Shift Operations	3.12	2.97
HC Electrical/I&C Maintenance	3.18	3.10
Other Work Control	3.21	
Fire Protection	3.21	
YARD/Nuclear Worker	3.22	3.10
Salem Electrical/I&C Maintenance		3.08
Supply Chain Organizations		3.10
Salem Other Maintenance		3.13

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**VIII. PSEG Nuclear "TARGETED" ORGANIZATIONS
BASED ON 2003 CCA RESULTS**

Introduction

SYNERGY has established and implemented a methodology¹³ to identify any specific PSEG Nuclear Functional Organizations that:

- Provided ratings that failed to meet “Industry Norms of Acceptability” -- as interpreted by SYNERGY, or
- Represent, on a relative basis, outliers¹⁴ with respect to “Relative Norms of Performance” based upon comparison with PSEG Nuclear's general performance norms.

This “two-step” methodology provides the ability to differentiate between:

- A situation involving **recommended** investigative or remedial actions to address a targeted organization’s failure to meet industry norms of acceptability; and
- A situation involving **suggested** actions to seek continued improvement in a targeted organization that meets industry norms of acceptability, but is a relative outlier with respect to PSEG Nuclear's general performance norms.

The methodology also incorporates a capability to identify relative priorities for any recommended or suggested actions.

In applying this methodology, key cultural metrics were evaluated to identify both absolute and relative organizational strengths and weaknesses using complementary analytical techniques and specified selection criteria related to:

- Either low absolute or relative NSC, SCWE, GCWE or LMS ratings.
- Either high absolute or relative negative response rates (i.e., negative pockets).

Based upon the application of this methodology, a number of individual PSEG Nuclear Functional Organizations have been “targeted” for additional management attention. They are identified herein and have been assigned Priority Levels.

Additional information regarding potential causes for the lower ratings by the Priority 1 & 2 “Targeted Organizations” is provided in Attachment 8 to this Report. This information is based upon insights obtained through the analysis of survey write-in comments.

¹³ Attachment 13 to this Report provides a detailed discussion of SYNERGY’s organizational assessment and targeting methodology & evaluation criteria.

¹⁴ Functional Organizations with key cultural metric ratings and/or negative response pockets that are approximately equivalent to the lower quartile (i.e., a percentile ranking < 25%) of the PSEG Nuclear Organization.

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Application of “Industry Norms of Acceptability” (as interpreted by SYNERGY) Criteria

The results of the evaluation of the individual PSEG Nuclear Functional Organizations using “Industry Norms” criteria for the NSC, SCWE, GCWE and LMS are presented in Figure 12. The bases for the assigned Integrated Priority Levels are identified.

It is noteworthy that, with one exception (Supply Chain), all of the organizations "targeted" for further evaluation/action are part of the Site Operations Organization. In addition, almost all of the Salem Plant Manager and Hope Creek Plant Manager Organizations are "targeted" based on low ratings.

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FIGURE 12

PSEG Nuclear 2003 CCA Targeted Organizations -- Industry Norms Criteria

<u>TARGETED ORGANIZATION</u>	NSC Ratings	NSC Pri Lev	SCWE Ratings	SCWE Pri Lev	GCWE Ratings	GCWE Pri Lev	LMS Ratings	LMS Pri Lev	INTEGRATED PRIORITY LEVEL
Salem Chemistry	3.2	1	14%	3	2.82	1	2.68	1	1
Hope Creek Shift Operations	3.27	1	10%	3	2.98	1	2.86	1	1
Online/Cycle Maintenance	3.28	1	13%	3	2.69	1	2.53	1	1
Salem Radiation Protection	3.28	1	16%	2	3.03	2	2.89	1	1
Salem Mechanical Maintenance ^{LR}	3.29	1	11%	3	2.83	1	2.61	1	1
Hope Creek Chemistry	3.34	2	15%	2	2.97	1	2.89	1	1
Salem 12Hr/WIN Maintenance ^{LR}	3.45	2			2.98	1	2.79	1	1
<u>Hope Creek Operations</u>	3.36	2			3.04	2	2.96	1	1
Hope Creek Mechanical Maintenance	3.42	2			3.04	2	2.92	1	1
<u>Salem Plant Manager Orgs</u>	3.47	2			3.10	2	2.94	1	1
<u>Salem Maintenance</u> ^{LR}	3.49	2			3.10	2	2.88	1	1
<u>Hope Creek Plant Manager Orgs</u>	3.44	2			3.09	2	3.00	2	2
Yard/Nuclear Worker			3.79	2	26%	3	3.10	2	2
Salem Shift Operations	18%	3			3.12	2	2.97	1	2
<u>Salem Operations</u>	16%	3			26%	3	3.06	2	2
Hope Creek 12Hr/WIN Maintenance ^{LR}					3.06	2	2.99	1	2
<u>Hope Creek Maintenance</u> ^{LR}					3.08	2	2.99	1	2
Other Training Orgs	17%	3							3
Salem Other Maintenance					26%	3	3.13	2	3
Salem Electrical/I&C Maintenance ^{LR}							3.08	2	3
Hope Creek Electrical/I&C Mntnce. ^{LR}							3.10	2	3
Supply Chain ^{LR}							3.10	2	3
Fire Protection					29%	3	29%	3	4
<u>Work Control Orgs</u>					28%	3	29%	3	4
<u>Site Operations Organizations</u>							26%	3	4

Note: LR indicates a Low Responding Organization in terms of Survey Participation

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Application of “Relative Norms” Criteria (based upon comparison with PSEG Nuclear General Performance Norms)

The specific criteria used in the evaluation of the individual PSEG Nuclear Functional Organizations using “PSEG Nuclear General Performance Norms ” criteria for the NSC, SCWE, GCWE and LMS are presented in Figure 13.

**FIGURE 13
PSEG Nuclear General Performance Norms Criteria**

Key Cultural Metric	PSEG Nuclear Composite Rating	Relative Outlier Criteria
NSC Mean Value	3.73	<3.54
NSC Negative %	11.50%	>14.0%
SCWE Mean Value	4.31	<4.09
SCWE Negative %	5.60%	>8.1%
GCWE Mean Value	3.4	<3.23
GCWE Negative %	20.50%	>25.5%
LMS Mean Value	3.32	<3.15
LMS Negative %	22.00%	>27.0%

The results of the evaluation of the individual PSEG Nuclear Functional Organizations using the “PSEG Nuclear General Performance Norms ” criteria for the NSC, SCWE, GCWE and LMS are presented in Figure 14. The bases for the assigned Integrated Priority Levels are identified.

It is noteworthy that, with one exception (Supply Chain), all of the organizations "targeted" for further evaluation/action are part of the Site Operations Organization. In addition, almost all of the Salem Plant Manager and Hope Creek Plant Manager Organizations are "targeted" based on low ratings.

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FIGURE 14

PSEG Nuclear 2003 CCA Targeted Organizations -- PSEG Nuclear Performance Norms Criteria

<u>TARGETED ORGANIZATION</u>	<u>NSC Ratings</u>	<u>NSC Outlier</u>	<u>SCWE Ratings</u>	<u>SCWE Outlier</u>	<u>GCWE Ratings</u>	<u>GCWE Outlier</u>	<u>LMS Ratings</u>	<u>LMS Outlier</u>	<u>INTEGRATED PRIORITY LEVEL</u>
Salem Chemistry	3.20	YES	3.97	YES	2.82	YES	2.68	YES	1
Hope Creek Shift Operations	3.27	YES	4.01	YES	2.98	YES	2.86	YES	1
Salem Radiation Protection	3.28	YES	3.83	YES	3.03	YES	2.89	YES	1
Online/Cycle Maintenance	3.28	YES	3.87	YES	2.69	YES	2.53	YES	1
Salem Mechanical Maintenance ^{LR}	3.29	YES	4.01	YES	2.83	YES	2.61	YES	1
Hope Creek Chemistry	3.34	YES	4.03	YES	2.97	YES	2.89	YES	1
<u>Hope Creek Operations</u>	3.36	YES	4.07	YES	3.04	YES	2.96	YES	1
Hope Creek Mechanical Maintenance	3.42	YES	3.98	YES	3.04	YES	2.92	YES	1
Yard/Nuclear Worker	3.52	YES	3.79	YES	3.22	YES	3.10	YES	1
<u>Hope Creek Plant Manager Orgs</u>	3.44	YES	8.7%	YES	3.09	YES	3.00	YES	1
<u>Salem Plant Manager Orgs</u>	3.47	YES	8.8%	YES	3.10	YES	2.94	YES	1
Salem 12Hr/WIN Maintenance ^{LR}	3.45	YES			2.98	YES	2.79	YES	1
<u>Salem Maintenance</u> ^{LR}	3.49	YES			3.10	YES	2.88	YES	1
Salem Shift Operations	3.53	YES			3.12	YES	2.97	YES	1
<u>Hope Creek Maintenance</u> ^{LR}			4.06	YES	3.08	YES	2.99	YES	1
<u>Facilities Orgs</u>			3.94	YES					2
Warehouse			3.96	YES					2
<u>Salem Operations</u>	16.2%	YES			3.19	YES	3.06	YES	3
Hope Creek 12Hr/WIN Maintenance ^{LR}					3.06	YES	2.99	YES	3
Hope Creek Electrical/I&C Mntnce. ^{LR}					3.18	YES	3.10	YES	3
Salem Other Maintenance			8.4%	YES	25.6%	YES	3.13	YES	3
Fire Protection					3.21	YES	29.1%	YES	3
<u>Work Control Orgs</u>					3.22	YES	28.9%	YES	3
Other Work Control Org					3.21	YES			3
Salem Electrical/I&C Maintenance ^{LR}							3.08	YES	3
Supply Chain ^{LR}							3.10	YES	3
Other Training Orgs	16.8%	YES							4

Note: LR indicates a Low Responding Organization in terms of Survey Response

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Targeted Organization Summary Table

A side-by-side comparison of the PSEG Nuclear Targeted Organizations based upon both "Industry Norms" criteria and "PSEG Nuclear General Performance Norms" criteria is presented in Figure 15.

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FIGURE 15
PSEG Nuclear 2003 CCA Targeted Organizations -- Summary Table

<u>TARGETED ORGANIZATION</u>	<u>INDUSTRY CRITERIA PRIORITY LEVEL</u>	<u>RELATIVE CRITERIA PRIORITY LEVEL</u>	<u>PRIMARY AREAS OF CONCERN</u>
Salem Chemistry	1	1	NSC, SCWE, GCWE, LMS
Hope Creek Shift Operations	1	1	NSC, SCWE, GCWE, LMS
Online/Cycle Maintenance	1	1	NSC, SCWE, GCWE, LMS
Salem Radiation Protection	1	1	NSC, SCWE, GCWE, LMS
Salem Mechanical Maintenance ^{LR}	1	1	NSC, SCWE, GCWE, LMS
Hope Creek Chemistry	1	1	NSC, SCWE, GCWE, LMS
Salem 12Hr/WIN Maintenance ^{LR}	1	1	NSC, GCWE, LMS
<u>Hope Creek Operations</u>	1	1	NSC, GCWE, LMS
Hope Creek Mechanical Maintenance	1	1	NSC, GCWE, LMS
<u>Salem Plant Manager Orgs</u>	1	1	NSC, GCWE, LMS
<u>Salem Maintenance</u> ^{LR}	1	1	NSC, GCWE, LMS
<u>Hope Creek Plant Manager Orgs</u>	2	1	NSC, GCWE, LMS
Yard/Nuclear Worker	2	1	SCWE, LMS
Salem Shift Operations	2	1	NSC, GCWE, LMS
<u>Salem Operations</u>	2	3	NSC, GCWE, LMS
Hope Creek 12Hr/WIN Maintenance ^{LR}	2	3	GCWE, LMS
<u>Hope Creek Maintenance</u> ^{LR}	2	1	GCWE, LMS
Other Training Orgs	3	4	NSC
Salem Other Maintenance	3	3	LMS
Salem Electrical/I&C Maintenance ^{LR}	3	3	LMS
Hope Creek Electrical/I&C Mntnce. ^{LR}	3	3	LMS
Supply Chain ^{LR}	3	3	LMS
Fire Protection	4	3	GCWE
<u>Work Control Orgs</u>	4	3	GCWE
<u>Site Operations Organizations</u>	4		LMS
<u>Facilities Orgs</u>		2	SCWE
Warehouse		2	SCWE

Note: LR indicates a Low Responding Organization in terms of Survey Response

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IX. OPPORTUNITIES FOR IMPROVEMENT

INTRODUCTION

The process utilized to identify potential Opportunities for Improvement at the PSEG Nuclear Composite or Site-wide Level included the following steps:

1. Issue Identification

- Evaluation of the numerical survey ratings of CCA Topical Areas using pre-established numerical threshold criteria¹⁵.
- Evaluation of numerical survey ratings of individual survey questions using pre-established numerical threshold criteria¹.
- Evaluation of survey write-in comments to identify recurring themes or potentially significant issues that may not have been identified through the evaluation of numerical ratings for CCA Topical Areas or individual survey questions.

2. Issue Integration

- Analysis of the identified issues to determine key interrelationships and associated common underlying root causes or drivers.
- Identification of Major Issues that are driving lower ratings in multiple Topical Areas and that will likely require a set of coordinated actions to address multiple and inter-related underlying causes.

3. Issue Characterization

- Development of a statement of the issue/opportunity for improvement and, where necessary, an accompanying description of key factors contributing to the existence of the issue/opportunity for improvement. Analysis of the write-in comments is particularly helpful in this regard, as they oftentimes provide insights into the underlying causes for the lower ratings and occasionally contain suggestions for improvement.
- Clarification of the “real” versus “apparent” reasons for lower ratings in certain Topical Areas.

4. Issue Prioritization

While the numerical ratings provide a method for assigning relative priorities to identified issues/opportunities for improvement, SYNERGY has provided suggestions regarding the

¹⁵ For example, for the NSC, a mean value rating < 3.50 for either a Topical Area or an individual survey question is considered to represent an opportunity for improvement. For the GCWE or the LMS, a mean value rating < 3.15 for either a Topical Area or an individual survey question is considered to represent an opportunity for improvement. For the SCWE, the threshold ratings for identification of an opportunity for improvement include consideration of both mean value ratings and negative response percentages; the specific SCWE threshold criteria vary depending on the element of the SCWE under evaluation (see the Attachment on “Detailed Analysis of the SCWE” for information on the specific criteria utilized).

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relative importance of the issues/opportunities for improvement based on the following considerations:

- There are likely to be resource limitations for addressing the identified issues/opportunities for improvement. Not all issues can be effectively addressed simultaneously.
- It is important to successfully address and resolve a few key issues first and then to build upon that success in proceeding to address the remaining issues. Accordingly, in addition to the suggested priority levels, certain key issues are designated as “Key Building Blocks for Success” (KBB).
- Some issues, particularly identified Major Issues are more important simply because of the pervading impact that they have upon multiple aspects of organizational attitudes, culture and performance.

5. Targeted Organizations

Through the use of a pre-established “Targeting Methodology”¹⁶, individual Functional Organizations that are considered to be organizational outliers either with respect to “Industry Norms of Acceptability” or “PSEG Nuclear General Performance Norms” have been identified¹⁷. For each of these organizations, an analysis of the write-in comments has been provided to provide additional insights into the underlying causes for the lower ratings provided by these organizations. This information should be integrated with other information currently available to management. In some cases, it may be necessary or appropriate to obtain additional information through personnel interviews or other means.

The Targeting Methodology includes a built-in Priority Assignment for further evaluation and/or remedial actions.

6. Safety Conscious Work Environment

Based upon a detailed analysis of the SCWE, individual Functional Organizations with notably lower ratings for one or more of the key elements of the SCWE have been identified¹⁸. For the most part, these organizations were already identified as Targeted Organizations based upon their ratings of the Overall SCWE. However, there are a few Functional Organizations that provided lower ratings for certain specific attributes of the SCWE and were not previously Targeted based upon Overall SCWE ratings.

¹⁶ See Attachment 13 to this Report: “Targeted Organization Methodology”

¹⁷ See Section VIII of this Report: “Targeted Organizations”

¹⁸ See Attachment 7 to this Report: “Detailed Analysis of the SCWE”

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LISTING OF OPPORTUNITIES FOR IMPROVEMENT

The following is a listing of the identified Opportunities for Improvement, which includes SYNERGY's recommended priority assignment.

Opportunities for improvement identified in the "Targeted Organizations" Section of this Report are not repeated herein.

Major/Key Issue and Opportunity for Improvement

Priority Level 1:

"Plant equipment and the material condition of the plants are perceived to be in a degraded condition as manifested by long-standing or recurring equipment problems, work-arounds and compensatory measures. This situation is perceived to be worsening."

Sub-Issues include the following:

- Management commitment to provide the necessary resources and time to effectively address and resolve plant equipment and plant material condition problems in a timely manner, including (but not limited to) addressing the current backlog of identified problems. (KBB)
- Improving the effectiveness of the Corrective Action Program in terms of achieving desired results – that is, development and implementation of timely and effective (i.e., lasting) resolutions for identified equipment problems. (KBB)
- Improving the effectiveness of the Maintenance Work Planning & Scheduling Process in terms of desired results – timely and effective implementation of corrective actions to address identified equipment problems. (KBB)
- Improving the effectiveness of Engineering work management and control (i.e., prioritization and resource allocation) to ensure that sufficient resources and sufficient time are provided for the development of high quality (i.e., lasting) resolutions for identified equipment problems. (KBB)
- Improving the effectiveness of the Maintenance Organizations in terms of increased "wrench time" and the quality of maintenance work. (KBB)
- Establishing increased individual ownership (including responsibility and authority) for the timely and effective resolution of specific, identified equipment problems. (KBB)

Additional information related to this Major Issue/Opportunity for Improvement is provided in the "Further Characterization/Discussion" Section below.

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Other Opportunities for Improvement

Priority Level 1:

- Further evaluation of the underlying causes for lower SCWE ratings in specific individual Functional Organizations and remedial action as appropriate.
- Increased emphasis on Senior Management’s expectations with respect to receptivity and sensitivity to potential Nuclear Safety concerns raised by employees and with respect to valuing employees who raise, pursue or escalate such concerns. (KBB)
- Improve management communications on the bases for key operational decisions and for decisions related to deferral of actions to address potentially significant equipment problems. (KBB)
- Establish and communicate an enduring Vision for the PSEG Nuclear organization, including associated strategies and plans to attain that Vision over time. (KBB)
- Establish a more effective and productive relationship between Management and the Union, including obtaining alignment on organizational Vision and the strategies and plans to achieve that Vision. (KBB)
- Effectively implement defined strategies and plans to attain the organizational Vision over time. (KBB)
- Establish an organizational philosophy that emphasizes and supports “doing things right for the right reasons” and “doing things right the first time”. (KBB)
- Ensure Management responsiveness to the results and employee feedback obtained from this survey/assessment.

Priority Level 2:

- Take actions to improve employee confidence in the Employee Concerns Program, particularly in those organizations that provided low ratings¹⁹. (KBB)
- Increase management (including Senior Management) time in the field interacting with the workforce – for the purposes of building trust & confidence, communicating and learning first-hand about potential roadblocks to success. (KBB)
- Establish an effective training program for System Engineers to ensure that they obtain, as quickly as possible, a firm understanding of the design, functionality and operation of their assigned systems. (KBB)
- Provide additional information and training on the effective and efficient use of the SAP. (KBB)
- Improve General Communications to employees to ensure that they are adequately informed about key issues, such as Strategies and Plans that affect the future of the plants and key decisions related to priorities and resource allocation. (KBB)
- Reevaluate the effectiveness of the Preventative Maintenance Program – including both its design and its implementation. (KBB)
- Establish an effective training program for Craft personnel and Technicians to ensure that these personnel obtain necessary qualification levels in a timely manner. (KBB)

¹⁹ See Attachment 16 to this Report: “SYNERGY’s Perspective on the Key Attributes of Effective Employee Concerns Programs”

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- Improve the effectiveness of utilization of the Performance Management Program to ensure that the recognition and reward for “high performers” is sufficiently differentiated from those of “poor performers”. (KBB)
- Provide managers and supervisors the support necessary to effectively hold “poor performers” accountable for their performance. (KBB)
- Establish an organizational philosophy that emphasizes and supports the concept of a “learning organization”. (KBB)
- Provide increased focus on career development, succession planning and promotion from within for “high potential” employees. (KBB)
- Ensure that appropriate change management principles are utilized in the planning and implementation of significant changes. (KBB)

Priority Level 3:

- Perform an evaluation of the Emergency Planning/Emergency Response capability of the Site, with particular emphasis on staffing, training and depth of the Emergency Response force.
- Provide upgraded computer equipment to address employee concerns regarding work-related inefficiencies associated with the use of “antiquated equipment”.
- Perform a “bottom up” review of training and qualification needs within each individual Functional Organization.
- Reevaluate the current approach on frequency of updates to documents, drawings and calculations in consideration of the impacts on the efficiency of those who utilize that information in the conduct of their work.
- Reevaluate the effectiveness of the Industrial Safety program, including its relationship to the Performance Incentive Program.
- Address employee concerns regarding the general work environment (i.e., HVAC, water supply, toilets, etc.) in the NAB and TB-2.

Priority Level 4:

- Improve the effectiveness of line organization self-assessment activities. Ensure that value is placed on substance rather than form.

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**FURTHER CHARACTERIZATION/DISCUSSION OF
THE MAJOR/KEY ISSUE AND OPPORTUNITY FOR IMPROVEMENT**

As noted above, the following issue has been identified as one that is driving lower ratings in multiple Topical Areas:

“Plant equipment and the material condition of the plants are perceived to be in a degraded condition as manifested by long-standing or recurring equipment problems, work-arounds and compensatory measures. This situation is perceived to be worsening.”

Based upon the nature of this issue and its pervasive effects on organizational attitudes, culture and performance, SYNERGY believes that it is the Key Issue/Opportunity for Improvement identified through the 2003 CCA.

This issue is considered to be driving lower survey ratings in a number of Topical Areas, including – but not limited to – the following:

- Low ratings of Trust and Confidence in Senior Management (and to a lesser extent Middle Management) – particularly with respect to management’s commitment to longer-term plant performance and to establishment & implementation of effective strategies, plans and actions to maintain the plants and to improve plant performance.
- Very low ratings of the effectiveness of the Corrective Action Program/Notification Process in terms of both the timeliness and the effectiveness of the resulting corrective actions.
- Very low ratings of the effectiveness of the Maintenance Work Planning & Scheduling process in terms of ensuring that necessary maintenance work is effectively planned, scheduled and implemented.
- Very Low ratings of the adverse impacts of workload on organizational performance and plant material condition, particularly in terms of defining “high quality” corrective actions and ensuring that corrective actions are implemented in an effective and timely manner.
- Low ratings of Business Management Skills, Behaviors and Practices – particularly with respect to management focus or competence in the areas of work prioritization, resource management and management of key processes.
- Concerns about the effectiveness of the Maintenance Organizations.
- Concerns about Ownership of identified problems with plant equipment.
- Lower ratings of related topics in NSC Values, Behaviors & Practices – particularly certain aspects of “Nuclear Safety is our Top Priority” and “Operational Nuclear Safety”.
- Low morale and concerns about the long-term future of the plants – including concerns about long-term job security.

In terms of developing potential Initiatives and Action Plans to address this Key Issue and its associated elements, it is important to recognize that (1) an integrated approach is needed, and (2) actions that address both the current state of plant equipment/material condition and the key causes of the current situation are required.

Each of the Topical Areas related to this Key Issue are discussed and further characterized below:

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Low ratings of Trust and Confidence in Senior Management

The following survey questions received particularly low ratings:

- Our Senior Site Management Team provides effective leadership in ensuring that necessary changes are being made (2.86).
- Our Senior Site Management Team has established a clear strategy and sense of direction for our success (2.95).
- Management within my Functional Organization develops plans that create confidence that our goals will be achieved (3.03).
- Management within my Functional Organization follows through on commitments (3.15)
- Management within my Functional Organization provides a clear sense of direction (3.15)

The write-in comments provide the following additional insights on employee perceptions related to this subject:

- Senior Management, including Corporate Management, is perceived to be primarily (if not exclusively) concerned about short-term performance results. Accordingly, emphasis is being placed on short-term production and cost-control/reduction goals (including short refueling outages and staff downsizing) to the detriment of properly maintaining the plants and investing in equipment reliability and plant material condition.
- Senior Management personnel are believed to be on short-term employment contracts with incentives based solely on short-term plant performance.
- Previous commitments to address specific equipment reliability and performance issues have not been met in the past.
- Management is perceived as, in effect, promoting a philosophy of “we will live with degraded conditions” and “we will either run equipment to failure or until a real crisis develops”.
- Management has not effectively responded to input provided by employees, including input provided in previous employee surveys.

In summary, many employees believe that Senior Management is not sufficiently committed to effectively resolving long-standing equipment problems or to investing in the long-term future of the plants.

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Corrective Action Program/Notification Process

The overall rating of the effectiveness of the Corrective Action Program was 3.24, which places PSEG Nuclear in the 11th percentile of SYNERGY's industry database.

The following survey questions received particularly low ratings:

- Individual confidence that the Corrective Action Program (e.g., the Notification Process) will ensure that potential Nuclear Safety problems:
 - Are addressed in a timely manner (2.95)
 - Are resolved in an effective manner (2.97)
 - Are investigated sufficiently to define corrective actions that address the root cause (3.15)
 - Are prioritized appropriately (3.25)
- Lack of prior responsiveness by the Corrective Action Program (e.g., the Notification Process) is not having an adverse impact on my willingness to identify and pursue resolution of potential NS issues or concerns (3.47)

The write-in comments provide the following additional insights on employee perceptions related to this subject:

- The CAP frequently produces Ineffective Corrective Actions, which result in problem recurrence.
 - Frequent focus on symptoms rather than causes.
 - Poor evaluations, root cause determinations and resulting corrective actions due to (1) more emphasis being placed on "due date/schedule pressure"/"bean counting" than on the quality and effectiveness of work products, combined with (2) a large workload and competing time demands (oftentimes due to emerging/recurrent problems).
 - Management accepts or promotes "band aid" approaches/solutions to save time/\$\$\$ or to meet pre-defined (sometimes arbitrarily) schedules. This occurs both in the corrective action definition phase (engineering review) and in the corrective action implementation phase (maintenance).
 - Issues are being closed out prior to completion of work (corrective actions).
- The Corrective Action Program does not produce timely resolutions for identified problems.
 - Ineffective up-front prioritization/categorization allows too many low-value issues into the process. Process is overloaded, thereby diluting attention and resources from the more important issues. Similarly, too many issues are defined as Level 1 and 2. Many believe that there is a need for involvement of "better talent" at the front end of the process (i.e., the screening and prioritization phase).
 - Too often plant equipment problems/degraded conditions are identified in multiple and recurring Notifications, which are band-aided, rationalized or ignored until the problem develops into a crisis challenging continued operations.
 - Many of the longer-standing, difficult problems are seemingly lost or hung-up in the system.
 - CARB and ERB need to get on the same page (early in the process) in determining what necessary corrective actions should/will be funded in order to reduce unnecessary "wheel spinning" and to improve the effective utilization of resources.

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- There is a need for training on how to write a good Notification Report. Too many require extensive research by reviewers that could have been avoided or minimized.
- There is need for increased ownership of identified issues (e.g., by System or Component "Owners" in Engineering and Maintenance) to ensure that they are addressed in a timely and effective manner, consistent with their importance and urgency.
- There is a need to consult with personnel who initiate Notifications to ensure that their issue/concern is understood and to ensure that they are satisfied with the adequacy of the decisions made and/or corrective actions taken to resolve their issue/concern.
- There is a need for increased focus on equipment/degraded condition requiring Operator "workarounds" and "compensatory measures".
- There is a need to look hard at the manner in which the process is being implemented.
- There is a need to look hard at the interfaces between the CAP Process and other Processes. In particular, concerns were expressed that actions and/or priorities are lost/changed (1) when defined corrective actions are transferred to the "Work Planning & Scheduling Process" for implementation or (2) when corrective actions are transferred to Engineering or Projects to develop/design a detailed engineered solution.
- There is not a need for the continuing "churning" of the CAP/Notification Procedure and Process per se.

In summary, many employees believe that the Corrective Action Program/Notification Process is ineffective or "broken" based on the results that it is (or is not) producing – that is, timely and effective resolution of identified problems (particularly equipment problems). There is also concern that the current low level of confidence in the CAP/Notification Process may be having some degree of adverse impact on individual willingness to continue to use the system.

Maintenance Work Planning & Scheduling Process

Based on the write-in comments, many employees believe that the Maintenance Work Planning & Scheduling Process is ineffective or "broken" based on the results that it is (or is not) producing – that is, timely and effective implementation of corrective maintenance actions to resolve equipment problems and/or implementation of an effective preventative maintenance program for plant equipment.

The write-in comments provided the following additional insights on employee perceptions related to this subject:

- The quality of maintenance work packages is perceived to be very poor.
- As high as 80% may require fixing before being workable.
- There is overuse of "Troubleshoot and Repair as Necessary" directions versus identification of a specifically identified problem and the defined corrective actions to resolve it.
- Work Packages are not walked-down consistently.
- There are frequent problems with parts availability -- even when going into planned maintenance outages.
- The effectiveness of the Work-Week Window concept is being challenged by poor work package planning, extensive amount of emergent work (due to recurring problems with degraded equipment) and the need to balance PM vs. CM priorities.

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- Maintenance Work is generally perceived to be under-scheduled. Emphasis appears to be focused on meeting "schedule adherence" performance metrics rather than on fixing the plant in a timely and effective manner and/or on "backlog reduction".

In summary, many employees believe that the Maintenance Planning & Scheduling Process is ineffective or “broken” based on the results that it is (or is not) producing – that is, timely and effective implementation of corrective actions to resolve identified equipment problems and, to a somewhat lesser extent, implementation of Preventative Maintenance to minimize equipment reliability problems.

Adverse Impacts Of Workload

Impacts On Nuclear Safety

The overall rating of the “Adverse Impact of Workload on Nuclear Safety” was 3.44, which places PSEG Nuclear in the 21st percentile of SYNERGY’s industry database.

The following survey questions received particularly low ratings:

- Workload is not having an adverse impact on our ability to effectively resolve NS issues/concerns, including degraded conditions (3.29).
- Workload is not having an adverse impact on our ability to identify potential Nuclear Safety issues/concerns (3.46).

Other Impacts

The overall rating of “Other Adverse Impacts of Workload” was 3.07, which places PSEG Nuclear in the 16th percentile of SYNERGY’s industry database.

The following survey questions received particularly low ratings:

- Workload is not having an adverse impact on our ability to maintain plant material condition or reliability (3.01).
- Workload is not having an adverse impact on our ability to assure the quality of our work products (3.12).

The write-in comments related to this topic are similar in nature to those identified above under the discussion of the CAP/Notification process.

In summary, many employees believe that ineffective prioritization and management by “due date” or “schedule adherence” is adversely affecting their ability to carry out their work effectively. Some indicate that a “vicious cycle” syndrome exists, wherein the failure to resolve problems effectively the first time results in emergent/recurring problems that then affect their ability to effectively resolve the problems currently on their platter.

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Low ratings of Business Management Skills, Behaviors and Practices

In light of the above, it is not surprising that ratings of business management skills, behaviors and practices are low. The following survey questions received low ratings:

- Within my Functional Organization, we have an effective work management process (2.53).
- Within my Functional Organization, during the past 18 months we have made progress in improving the effectiveness of work prioritization and resource management (2.78).
- Supervisors and Management within my Functional Organization are effective at prioritizing our workload (3.12).

As indicated above, many employees have concerns regarding the effectiveness of the key business processes (e.g., the CAP/Notification Process and the Work Planning & Scheduling Process) that are intended to ensure that problems are identified, prioritized and resolved in a timely and effective manner. The write-in comments convey a significant sense of frustration on the part of employees with management's performance, focus and/or competence in ensuring that these processes are effective in terms of the intended results.

In summary, many feel that management's focus is on the processes themselves rather than on whether or not the processes are being implemented in a manner to achieve the intended results.

Effectiveness of the Maintenance Organizations

Based on the write-in comments, many employees believe that the effectiveness of the Maintenance Organizations is in need of improvement.

- Some, particularly personnel from within the Maintenance Organizations, feel that current Maintenance Management Philosophies are inappropriate:
 - Emphasis on "bean counting" and "meeting schedules" takes precedence over actually implementing corrective actions/completing work in an effective manner.
 - Under-loading the schedule so that the "bean counting"/schedule adherence will look better at the expense of getting more work done.
 - Position that "only scheduled work will be worked" when there are opportunities to complete work that could be worked at any time (i.e., outside of the conditions established for the current work-week window)
- The following areas of "management work" were identified as needing attention:
 - Identify and address root causes of required re-work and recurring equipment problems.
 - Establish an effective/efficient PM program that is flexible enough to ensure that competing priorities with scheduled/emergent CM are appropriately taken into consideration.
 - Update time estimates (used in scheduling) for performing PMs based upon actual experience.
 - Unload Supervisors of administrative burden to ensure increased supervisory field presence.

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- Genuinely encourage and respond appropriately to input from the workforce; demonstrate more trust in the workforce regarding problems encountered in the field and their associated suggestions.
- Ensure supervisors are knowledgeable of the work they are responsible for.
- Increase focus on achieving “Training & Qualification” of personnel to prepare for attrition/aging work force.
- Provide effective oversight of work performed by contractors.
- Some Maintenance personnel identified the following key barriers to organizational success and suggested that they should be addressed/resolved to improve organizational efficiency:
 - Quality of Work Packages (Maintenance Planning)
 - Availability of Tools, particularly Test Equipment
 - Availability of Parts (Procurement)
 - Engineering Support as needed during Troubleshooting (Engineering)

In summary, Maintenance personnel are genuinely concerned about the effectiveness of their organizations and have offered suggestions for improvement.

Ownership of Identified Problems With Plant Equipment

The write-in comments included a number of suggestions to improve individual ownership (responsibility and authority) for the effective and timely resolution of identified problems with plant equipment.

- System Engineers should be held responsible for the health of their systems and should be given appropriate authority for establishing priorities and for ensuring definition of effective corrective and preventative actions for their assigned systems.
- Maintenance Management should assign ownership of plant components to specific Maintenance personnel. They should work in concert with System Engineers and Component Engineers to ensure implementation of timely and effective corrective and preventative actions for their assigned components.
- Operations personnel should take more ownership of identified equipment performance/condition problems to ensure that priorities and schedules are appropriate for addressing the identified issues.

In summary, many feel that increased individual ownership and accountability is a key ingredient to ensuring success.

Related Nuclear Safety Values, Behaviors & Practices

In addition to survey questions directly related to the effectiveness of the CAP/Notification Process and/or to Adverse Impacts of Workload on Nuclear Safety, the following NS VB&P questions related to this Key Issue received low ratings:

- At our Site, we pursue resolution of important and long-standing equipment and material problems that could adversely affect Nuclear Safety (3.08).
- With respect to important issues or activities (especially those that have the potential to adversely affect Nuclear Safety), management appropriately exercises accountability and follow-up for associated planned actions (3.19).

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- Individual confidence that Site management is making well thought out decisions in the allocation of resources to assure that Nuclear Safety is maintained (3.21).
- Our Site Senior Management Team ensures that the actions taken to address nuclear safety related issues (including issues associated with potentially degraded plant conditions) are defined and implemented in a timely manner (3.25).
- Overall, the influence of Site Senior Management in promoting our Nuclear Safety priorities (i.e., by walking the talk & leading by example) today (3.33).

In summary, these ratings indicate that many employees correlate the current situation (i.e., with respect to timely and effective resolution of equipment problems and maintenance of plant material condition) with a reduction in the organizations' respect for Nuclear Safety as its Top Priority.

Targeted Organizations

Several individual PSEG Nuclear Functional Organizations have been “targeted” for additional evaluation or action based upon the 2003 CCA results. These are identified in the “Targeted Organizations” section of this Report.

It is suggested that the organizations designated as Priority Levels 1 and 2 receive management attention in the near term.

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X. LIST OF APPENDICES, ATTACHMENTS AND OTHER SUPPORTING INFORMATION

SYNERGY Proprietary Information and Copyright Notice:

The following Attachments and CD-ROM contain SYNERGY Proprietary and Copyright information. Accordingly, SYNERGY retains intellectual property interest in the overall Comprehensive Cultural Assessment methodology including but not limited to the underlying cultural models, analytical techniques and presentation formats. Any disclosure, copying, appropriation or other unauthorized use of this Proprietary and Copyright information is prohibited by U.S. Copyright laws. This information is being provided for PSEG Nuclear's sole, internal use and SYNERGY does not authorize disclosure to or copying for use by any third party (non-PSEG Nuclear personnel) without SYNERGY's prior written consent. This restriction does not prohibit disclosure to PSEG Nuclear's regulators, but does require that SYNERGY be notified of such disclosure and that SYNERGY be afforded an opportunity to identify any material that should be restricted from public disclosure to the extent permitted by Law.

Report Appendices:

<u>Appendix</u>	<u>Item Description</u>
A	Site Operations Organization Attachments
B	Engineering & Technical Support Organization Attachments
C	Nuclear Assessment Organization Attachments
D	Business Support Organization Attachments

Report Attachments:

<u>Attachment</u>	<u>Item Description</u>
1	Color-Coded Windows: Keys for Interpreting the Information
2	NSC Cultural Metrics Color-Coded Windows Tables
3	GCWE Cultural Metrics Color-Coded Windows Tables
4	LMS Cultural Metrics Color-Coded Windows Tables
5	Special Topics Color-Coded Windows Tables
6	Individual Survey Question Ratings for the PSEG Nuclear Composite Organization
7	Detailed Analysis of the SCWE
8	PSEG Nuclear Survey Write-In Comments
9	Summary Table of Key Cultural Metrics
10	PSEG Nuclear Composite Key Cultural Metrics Graphs
11	PSEG Nuclear Composite Demographic Variations
12	PSEG Nuclear Composite Organization Survey Response Data
13	SYNERGY's Targeted Organization Methodology
14	SYNERGY's Integrated Performance Indicator (IPI) and Approximate Trend Methodology
15	PSEG Nuclear Composite Report on INPO SOER 02-04 Information
16	SYNERGY's Perspective on the key Attributes of Effective Employee Concerns Programs

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CD-ROM Information

The following Adobe Acrobat files are on the PSEG Nuclear 2003 CCA CD-ROM:

Individual Question Ratings (all 2003 CCA questions)

Organization Sorts -- Low to High Ratings (PSEG Nuclear Composite, PSEG Nuclear Organizations)

CHARTER

I Statement of Purpose

E. James Ferland, Chairman, President and Chief Executive Officer, Public Service Enterprise Group, has approved an assessment of the work environments for raising and addressing concerns at Hope Creek and Salem Nuclear Generating Stations, and to provide recommendations.

II Issues To Be Assessed

The assessment will involve structured interviews, document reviews and analysis, and will be informed and focused by:

- (a) The Synergy survey and the Utility Services Alliance (USA) Assessment, which will identify pockets of concern and unresolved conflict events that may negatively affect the work environment.
- (b) Selection of interview populations that are both generally representative of the site organizations and determined by the Synergy survey and USA Assessment from (a) above. Interviews will begin in the Operations Department.
- (c) ECP Performance Indicators and survey results.
- (d) The NRC inspection record.
- (e) Analyses of events involving unresolved conflict, including events involving the Corporate/Site interface.
- (f) A logical framework consisting of the four basic elements or pillars of a safety conscious work environment (SCWE): 1) employee willingness to raise concerns; 2) management effectiveness in resolving safety issues; 3) ECP effectiveness; and 4) management effectiveness in resolving retaliation and chilling effects issues. This framework will be augmented by NRC's recent best practice outline, the five INPO SOER characteristics of an effective safety culture, and the questions appended to NRC's Inspection procedure 71152.

Given the above, the assessment will:

- A. Comprehensively assess the current work environment within PSEG Nuclear for raising and addressing concerns; and
- B. Make recommendations to further enhance the work environment.

III Key Elements of the Assessment

- A. The Assessment Team will conduct a review of the events generally described in the NRC January 28, 2004 letter, and any other suspected "previous unresolved conflicts" to determine the need for further review, their root causes, and correction action to prevent recurrence.
- B. The Team will further review and provide recommendations with regard to:
1. Policies and procedures implementing PSEG's expectations to maintain a SCWE with respect to the four criteria;
 2. Training as to those policies and procedures, including general site access training, periodic refresher training, and supervisory skills training;
 3. The effectiveness of the corrective action program as measured by indicators such as: unscheduled entries into Limiting Conditions for Operations, percentage of rework, overdue actions, repeat issues, self-identification ratio, request(s) for extensions, average time to investigate, and feedback process to employees who raise concerns. The Team will specifically review improvements, trends and ongoing plans to enhance the Corrective Action Plan.
 4. The effectiveness of the Employee Concerns Program, including the correlation among concerns raised to NRC, ECP, and the primary corrective action program;
 5. The interface among Human Resources, Labor Relations, and management in addressing work place issues;
 6. The interfaces and interaction between corporate and the site and how those interfaces and interactions have affected communication of management's expectations of the work environment at Hope Creek and Salem;
 7. The number, nature, and trend in NRC allegations, including NRC referred allegations and PSEG's response to these referred allegations; and
 8. Claims of retaliation over the past several years, including management actions to address any chilling effect in response to such claims.

IV Methodology

The assessment will be conducted by document review, interviews, surveys and analysis.

V Team Organization

A. The Assessment Team

The Team will be led by James O'Hanlon, formerly the Chief Nuclear Officer at Dominion. William Cottle, former Chief Executive at South Texas Nuclear Operating Company will be the lead member on the Corporate/Site interface. Jacque Durr, former NRC Region I manager, will be the lead member for the NRC inspection record and unresolved conflict events. Neil Bergh, PSEG QA manager and a veteran of the Millstone recovery, will be the lead member for assessment of PSEG programs, such as the ECP, and will be the PSEG lead point of contact with the USA Alliance assessment of PSEG's INPO SOER response on safety culture. Wayne Kropp, former NRC Region III manager, will be the lead member for problem identification and resolution. John Guibert, who led the Synergy survey, will be available for advice and consultation regarding the survey results and recommendations. Barry Letts, former NRC Field Director, Office of Investigations, Region I, will assist in interviews. Joseph Callen, former NRC EDO, and Michael Tuckman, former Duke Power Chief Nuclear Officer, will be available to review plans, results and recommendations at the request of the Assessment Team or PSEG management.

B. Support Personnel:

Robert Grazio will be the liaison between the Assessment Team and Licensing. Peter Przekop will coordinate logistics and provide administrative assistance for the Assessment Team. Tom Lake, Employee Concerns Manager, will provide input from an ECP perspective. Other clerical or personnel assistance will be provided on an as-needed basis.

C. Legal Support:

R. Edwin Selover, Senior Vice President & General Counsel – PSEG; Jeffrie Keenan, Assistant General Solicitor, and Morgan Lewis (George Edgar and Jay Gutierrez) will provide legal support to the Assessment Team.

VI Schedule, Briefing and Documentation:

A. It is expected that all interviews and related field work will be concluded by April 1, 2004. Field work will be documented consistent with a written protocol. Should issues arise that are not entered into the Corrective Action Program, the Team will refer those issues to management for appropriate action under the Performance Improvement Process, NC.WM-AP.ZZ-0002(Q).

B. It is expected that the Assessment Team will brief the Chief Executive Officer and PSEG Senior Management, on an as-needed basis, and that the Team's final briefing will occur by April 2, 2004.

C. The Assessment Team Report, setting forth findings and recommendations, is expected to be issued by April 8, 2004. The Report shall be addressed to Frank Cassidy, President and Chief Operating Officer, PSEG Power LLC, and Roy Anderson, with a copy to the Chief Executive Officer.

Approved:



E. James Ferland
Chairman of the Board, President and Chief Executive Officer
Public Service Enterprise Group Incorporated

Date:

Feb 13, 2004

SCWE Areas Reviewed By The Independent Assessment, SYNERGY Survey, and USA Assessment

SCWE Areas Reviewed By Independent Assessment	Related SYNERGY Survey "Dimensions," "Sub-Dimensions," and Considerations	Related USA Assessment Sections
SCWE Pillars		
1. Employees Feel Free to Raise Nuclear Safety Concerns / Management Encourages the Reporting of Nuclear Safety Concerns	<ul style="list-style-type: none"> • Nuclear Safety is Top Priority • Identification of Potential Nuclear Safety Issues • Demonstrated Willingness to Take Appropriate Action • Willingness to Identify a Potential Nuclear Safety Concern • Willingness to Escalate a Potential Nuclear Safety Concern 	<ul style="list-style-type: none"> • Problem Identification – Questioning Attitude • Safety Over Production
2. Normal Processes are Effective in Resolving Nuclear Safety Concerns	<ul style="list-style-type: none"> • Management Openness and Receptivity • Corrective Action Effectiveness • Work Management Effectiveness • Management / Supervisory Effectiveness and Receptivity 	<ul style="list-style-type: none"> • Corrective Action Program Rigor • Problem Identification – Questioning Attitude
3. Effective Alternative Mechanisms for Reporting Nuclear Safety Concerns	<ul style="list-style-type: none"> • ECP Acceptable Alternative Path • Overall Confidence in ECP • Visibility and Knowledge of ECP 	
4. Management is Effective at Detecting and Preventing Retaliation and Chilling Effect	<ul style="list-style-type: none"> • Indicators and Precursors of a Potentially Chilled Work Environment: • Personal Experience of Retaliation • Knowledge of Others' Experience of Retaliation 	
Additional Nine SCWE Criteria Reviewed by the Team		
1. Documentation and Communication of Management Expectations on SCWE	<ul style="list-style-type: none"> • High Standards • General Communications • Provide Direction • Build Confidence in Management • Build Trust in Management • Set a Good Example • Provide a Supportive Work Environment 	<ul style="list-style-type: none"> • Management Involvement -- Oversight / Coaching / Communication • Safety Over Production
2. Training on, and Reinforcement of Management's SCWE Expectations	<ul style="list-style-type: none"> • Personnel Training and Development • Continuous Improvement 	<ul style="list-style-type: none"> • Management Involvement -- Oversight / Coaching / Communication • Safety Over Production
3. Management of, and Interface With, Contractor Personnel		<ul style="list-style-type: none"> • Management Involvement -- Oversight / Coaching / Communication
4. Elements and Implementation of the Corrective Action Program	<ul style="list-style-type: none"> • Confidence that the Corrective Action Program Will Ensure Nuclear Safety Concerns Are: 	<ul style="list-style-type: none"> • Corrective Action Program Rigor • Problem Identification –

SCWE Areas Reviewed By Independent Assessment	Related SYNERGY Survey "Dimensions," "Sub-Dimensions," and Considerations	Related USA Assessment Sections
	<ul style="list-style-type: none"> ➤ Identified ➤ Prioritized Appropriately ➤ Investigated Sufficiently ➤ Addressed and Resolved in a Timely Manner 	Questioning Attitude
5. The Quality and Use Made of SCWE Self-Assessments		
6. Elements and Implementation of the Employee Concerns Program (Including SCWE Performance Indicators)	<ul style="list-style-type: none"> • Visibility and Knowledge of ECP • Management Support • Competence and Trustworthiness of ECP Staff • Thoroughness of Investigations • Appropriateness of Resolutions • Confidentiality 	
7. NRC Allegations, Including PSEG's Responses to NRC Referred Allegations		
8. SCWE Implications From Management's Administration of Labor Relations and Human Resources Policies, Procedures, and Practices.	<ul style="list-style-type: none"> • Performance Management (Recognition and Appraisal) 	<ul style="list-style-type: none"> • Management Involvement -- Oversight / Coaching / Communication
9. Management's Responses to Claims of Retaliation		

Assessment Documentation Protocol

I. Purpose: To ensure that interviews conducted during the Salem / Hope Creek Independent SCWE Assessment are documented clearly and consistently, and that materials collected and reviewed by the Assessment Team are retained in an auditable package.

II. Applicability: This Protocol applies to the structured, fact-finding interviews conducted by the Team of current or former Salem / Hope Creek personnel. Informal interviews of personnel, or interviews of personnel conducted for purposes of document collection do not need to be documented consistent with this Protocol. This Protocol also applies to documents and other materials collected and reviewed by the Assessment Team.

III. Protocol:

A. Interview Notes: Team members conducting interviews subject to this Protocol should take informal notes of the information provided by the person interviewed. Interview notes should accurately reflect both the questions asked by the interviewer and the answers provided by the person interviewed. The interviewer should also document information provided by the person interviewed that is not responsive to a question but is otherwise relevant to the Team's work.

B. Final Interview Record: Interviews subject to this Protocol will prepare a final interview record of each interviewed conducted. The interview record should be based on the information contained in the interviewer's notes. The interview record should be typed. After preparation of the interview record, the interviewer should retain the informal notes prepared during the interview in their own files.

1. Introductory Information: The interview record should document the introductory statement made by the interviewer regarding the purpose of the interview, to whom the information being provided will be given, and in what manner. In this regard, the interviewer should provide the person interviewed with a copy of the letter from Roy Anderson to PSEG Associates, dated February 24, 2004, discussing the assessment and the interview process.

2. Identifying Information: Interview records will not include the name of the person interviewed. The interview record will state the individual's plant affiliation (Hope Creek, Salem, site support or corporate support), department, and whether the individual is management (supervisor and above) or non-management (individual contributor).

3. Questions and Answers: The interview record will accurately reflect both the questions asked and the answers provided during the course of the interview. Information provided during the interview that is not responsive to a question asked by the interviewer may or may not be included in the final record at the discretion of the interviewer if necessary for the Team to conduct its work. The record may also include, at the interviewer's discretion, observations of the subject's demeanor and / or the interviewer's opinion regarding the subject's candor or truthfulness.

C. Confidentiality: The Assessment is confidential in nature and the identities of those interviewed will be provided to others only on a need-to-know basis. However, persons interviewed are not considered confidential sources under PSEG

Assessment Documentation Protocol

procedures. Accordingly, the Team will not provide the persons interviewed assurances of confidentiality regarding the information they provide but may inform them that the information they provide will be shared with others only on a need to know basis.

D. Documents: Documents collected and reviewed by the Assessment Team will be retained and be easily retrievable. The Team should, where possible, identify from whom the documents were received.

ARTIFICIAL ISLAND

SCWE QUESTIONS

State your name, plant affiliation, and position, how long you have been in your present position and total time on site.

Bargaining unit?

On January 28, 2004, the NRC sent a letter to Mr. Ferland outlining several concerns relating to Hope Creek and Salem work environments for raising and addressing nuclear safety and quality issues. In that letter, the NRC called into question the openness of management to concerns and alternate views, the strength of communications, and effectiveness of the stations' corrective action and feedback processes. It directed that the station management understand what messages the staffs at Salem and Hope Creek have taken from the various events over the past few years. In an effort to comply with the NRC requests, I have been asked to perform interviews of the staff to help better assess the safety conscious work environment and provide recommendations.

1. Would you raise a nuclear safety or quality concern? If not, why not?
 - a. If reluctant, why?
 - b. What needs to happen before you would be willing to raise concerns? Is there a threshold you would apply?
2. How would you go about raising a concern?
3. Have you raised safety or quality concerns with management?
 - a. If no, is this because you have had no concerns, or were reluctant to raise them?
 - b. If yes, to whom did you raise them and what were the circumstances?

- c. Were you treated any differently by management or your peers after raising the concern?
- d. Do you think management treated your concerns appropriately and were you satisfied with the actions taken?
- e. Are you willing to escalate a concern or issue if you don't feel it is properly resolved?
- f. Has your experience affected your willingness to raise issues in the future? Discuss why.
- g. Do you fear retaliation for raising nuclear safety or quality concerns?

4. Are you aware of others in your work group who have raised concerns with their immediate supervision or upper management?

- a. If yes, were they treated any differently by management or their peers? Was there any retaliation for raising the concerns?

b. Was the issue resolved to your satisfaction?

c. Were you informed of the results of the decision making process?

8. What is your view of station management's commitment to nuclear safety, and provide examples that demonstrate that commitment in their decision making?

9. What is your view on corporate's support to the site's needs and objectives? What is the basis for your position on this issue?

10. In your view, are there current operator workarounds and longstanding equipment issues? If so, why are these allowed to persist, and what is the impact?

11. How would you describe the effectiveness of the corrective action program?

12. Have there been any recent changes in management's attitude and practices toward the staff regarding event resolution and problem solving? If so, when and to what do you attribute the change?

13. How would you assess or rate your immediate supervisor's receptivity to the raising of concerns? What is the basis for your opinion?
- a. Department management's receptivity to the raising of concerns?
 - b. Station management's receptivity to the raising of concerns?
14. How would you describe the level of trust?
- a. Between you and your immediate supervision?
 - b. Between you and higher management?
15. Are there clear and candid communications between individuals within your work group?
- a. With other work groups?
 - b. With station management?
 - c. With corporate?
16. Are you aware of other resources, other than your chain-of-command, who are available to receive your concerns (i.e. ECP, NRC)? Would you use them if you felt the situation warranted it?

17. Have you received any training on the attributes of a safety conscious work environment at the site?

18. If you could change anything to improve the safety conscious work environment at Artificial Island, what would you do?

ARTIFICIAL ISLAND MANAGEMENT QUESTIONS

NAME:

PLANT AFFILIATION:

CURRENT POSITION/LENGTH OF TIME IN IT:

POSITION 18 MONTHS AGO:

TOTAL TIME AT THE PLANT:

On January 28, 2004, the NRC sent PSEG a letter outlining several concerns relating to the Salem and Hope Creek work environments for raising and addressing nuclear safety and quality issues. In that letter, the NRC called into question management's openness to concerns and alternate views, the strength of communications, and the effectiveness of the Station's corrective action and feedback processes. It directed that Station management understand what messages the staffs at Salem and Hope Creek have taken from various events over the past few years. In an effort to comply with the NRC request, an Assessment Team has been asked to perform interviews of the staff to better assess the safety conscious work environment and provide recommendations.

1. Do you believe your views and opinions are considered or acted upon by (and if not, why not):

a. More senior department management?

b. Station management?

c. Corporate management?

2. Would you raise a nuclear safety or quality concern? If not, why not?

a. Do you have any reluctance in raising such concerns?

b. Is there any threshold that has to be met before you are willing to raise a nuclear safety or quality concern?

3. Have you raised nuclear safety or quality concerns with higher management?

a. If not, is this because you haven't had any concerns or were reluctant to raise them?

b. If yes, to whom did you raise them and what were the circumstances?

c. After raising them, were you treated any differently by:

- Your peers?

- More senior management?

d. Were you satisfied with the actions taken on your concerns? If not, why not?

e. Are you willing to escalate a concern or issue if you do not feel it has been properly resolved? If yes, how would you do so?

f. Have your experiences to date affected your willingness to raise nuclear safety or quality issues in the future? If so, why?

g. Do you have any fear of retaliation for raising such concerns?

h. Are you aware of anyone raising such concerns experiencing retaliation or some form of reprisal? If so, detail?

4. Have your feelings on the issue of raising nuclear safety and/or quality concerns changed in the past year or two? If so, why did they change?

5. As a supervisor/manager what actions have you taken to encourage personnel within your work group/department to raise nuclear safety and quality concerns?

6. Do you face any particular obstacles in resolving issues within your scope of responsibility? If so, what are they and why do they exist?

7. Is your supervision/management able to voice their views and opinions on nuclear safety and quality issues to higher department management, and has it always been that way?

a. To the management of other departments?

b. To Station management?

8. How would you rate the level of teamwork and cooperation within:

a. Your department?

b. Did anyone in your work unit/dept. who was asked to participate in this assessment, choose not to? If so, do you know why?

c. The facility/unit as a whole?

9. Relative to teamwork and cooperation, if there are any problem areas where are they and why do you feel they exist?

10. Have there been any specific incidents or issues that have had a negative impact on the work environment within any functional group or the site as a whole and are they still having an impact today? If so, details?

11. Are you aware of unresolved conflicts between any of the various organizational levels or groups at the plant? If so, detail?

12. Have you been involved in plant operating events where you have observed management's decision-making process? Details?

a. Was your opinion/view considered on the resolution of the problem?

b. How receptive was management to your views? Did it vary at different levels?

c. Were you informed of the results of the decision making process?

13. What is your view of Station management's commitment to nuclear safety, and can you provide examples that reflect that commitment in their decision-making? Have you always felt this way?

14. Have you noticed any changes in management's attitude and practices in regard to event resolution and problem solving? If so, to what do you attribute the change?

15. How did command and control work prior to the 2002 reorganization?

16. In your view, are there current operators workarounds and longstanding equipment issues? If so, why are they allowed to persist and what is their impact on the site?

17. How do you see your role in the site's corrective action process (CAP)?

18. How would you describe the effectiveness of the CAP? Why do you feel that way?

a. What could be done to improve the effectiveness of the CAP?

19. How would you describe the quality of communications within your department?

a. With other work groups?

b. With Station management?

c. With corporate?

20. Do you have any insight into the interaction between the site and corporate/Newark?
If so, how does it work?

21. What is your view of corporate management's commitment to nuclear safety? What
is the basis for your belief?

22. What is your view on corporate management's support, including the expenditure of
funds and application of human resources, to the site's needs? What is the basis for your
view?

23. In your view has the corporate interaction changed since deregulation? If so, how?

24. Are there currently, or have there been in the past, greater demands placed on
generation and production over safety?

a. If so, how did the demand manifest itself, who communicated it, and
how was it communicated?

25. Have you ever participated in a meeting or teleconference with corporate personnel
that discussed the commitment of funds to the site? If so, details (with whom, what
discussed etc.)?

26. Would you be willing to use other resources, other than the chain of command, to raise nuclear safety and quality concerns if you felt the situation warranted it? If so, which ones?

27. What does a safety conscious work environment (SCWE) mean to you?

28. What could be done to improve the SCWE at the Station?

29. If your work group/unit received a low SCWE score as a result of the Synergy survey, to what do you attribute that?

ADDITIONAL COMMENTS:

**Independent Assessment Team
Completed Interviews**

Organization/Classification	Hope Creek	Salem	Common	Totals
Operations				80
Plant Manager	1	1		
Manager	1	1		
AOM	2	2		
SM	2	1		
CRS	8	13		
NCO	12	9		
NEO	14	10		
STA	2	1		
Chemistry				8
Manager (also Rad. Prot.)			1	
Superintendent	1	1		
Supervisor	1	1		
Technician	1	2		
Rad. Prot.				12
Superintendent	1	1		
Supervisor	1	1		
Technician	4	4		
OL Cyc. Maint.				
Manager			1	6
Supervisor	1	1		
Planner/Scheduler	1	2		
Maintenance				22
Manager	1	1		
Superintendent		1	1	
Supervisor	1	1	1	
Technician	5	6	2	
Other			2	
Yard/Nuclear Worker				3
Supervisor			1	
Technician			2	
Engineering/QA				
Director Engineer			1	18
Manager			1	
Engineering	3	3	10	
Quality Assurance				4
QA Supervisor			1	
QA Auditor			3	
Security				6
Supervisor			1	
Guard			5	
Sr. Management Site			4	4
Sr. Management Corp.			11	11
Management (site other)				
Former VP Operations			1	1
Manager Plant Support			1	1
Miscellaneous Managers			2	2
Former Employees				
Managemnt		1	3	4
Non-Management			6	6
Other				
Contractor Supervisor			1	1
NRB Chairman			1	1
Total	63	64	63	190

SCWE Attribute Cross Reference

Four Pillars Of SCWE	SCWE Attributes (NRC Policy Statement)	Nine SCWE Areas Assessed by Assessment Team
1. Employees Feel Free to Raise Nuclear Safety Concerns / Management Encourages the Reporting of Nuclear Safety Concerns	1. Management Encouragement of Employees to Raise Concerns 2. SCWE Training 3. Management Behaviors 4. Contractor Awareness of SCWE Responsibilities	1. Documentation and Communication of Management Expectations on SCWE 2. Training on, and Reinforcement of Management's SCWE Expectations 3. Management of, and Interface With, Contractor Personnel
2. Normal Processes are Effective in Resolving Nuclear Safety Concerns	5. Prompt Notification of Concerns (CAP) 6. Prioritization and Review of Concerns (CAP) 7. Appropriate Resolution of Concerns (CAP) 8. Feedback to the Concerned Individual (CAP) 9. SCWE Self-Assessments	4. Elements and Implementation of the Corrective Action Program 5. The Quality and Use Made of SCWE Self-Assessments
3. Effective Alternative Mechanisms for Reporting Nuclear Safety Concerns	10. Alternative Mechanisms to Raise Concerns 11. SCWE Performance Indicators	6. Elements and Implementation of the Employee Concerns Program (Including SCWE Performance Indicators)
4. Management is Effective at Detecting and Preventing Retaliation and Chillsdaffling Effect	12. The Number and Nature of NRC Allegations 13. Management Actions Regarding Significant Adverse Employment Decisions 14. Management Responses to Claims of Significant Adverse Employment Decisions and Claims of Retaliation	7. NRC Allegations, Including PSEG's Responses to NRC Referred Allegations 8. SCWE Implications From Management's Administration of Labor Relations and Human Resources Policies, Procedures, and Practices. 9. Management's Responses to Claims of Retaliation

E. James Ferland
Chairman of the Board
President and Chief Executive Officer

Public Service Enterprise Group Incorporated
80 Park Plaza, 4B, Newark, NJ 07102-4194
tel: 973.430.5620



February 27, 2004
LRN-04-0090

Mr. Hubert J. Miller, Regional Administrator
United States Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Subject: PSEG Plan for Assessing and Improving the Work
Environment to Encourage Identification and Resolution of
Issues

Reference: 1) NRC Letter dated January 28, 2004; Work Environment
for Raising and Addressing Safety Concerns at the Salem
and Hope Creek Generating Stations

2) PSEG Letter dated February 13, 2004; NRC Letter dated
January 28, 2004; Work Environment for Raising and
Addressing Safety Concerns at the Salem and Hope Creek
Generating Stations

Dear Mr. Miller:

In response to your letter of January 28, 2004 (Reference 1), this letter provides the plan of Public Service Enterprise Group Incorporated ("PSEG") to conduct an in-depth assessment of the work environment for raising and addressing safety concerns at the Salem and Hope Creek Generating Stations. This effort, which is currently being conducted by an Independent Assessment Team, is utilizing several sources of information including structured interviews of personnel at the stations and at PSEG corporate. The Independent Assessment Team is also reviewing available data, including NRC inspection records to address cross-cutting issues, and the comprehensive survey administered by Synergy in December 2003, and will review the results of a previously planned assessment by the Utility Service Alliance ("USA") when they are available in mid-March. The assessment will include a review of the impact on the work environment of operational decision-making and of problem identification and resolution, including timeliness of corrective action and communication.

In addition to the independent assessment, PSEG has initiated a number of immediate actions to emphasize the importance of a Safety Conscious Work Environment ("SCWE") and has begun to train managers and supervisors on the subject. We are also continuing our existing actions, commenced in 2003 under the new leadership of Mr. Roy Anderson, President and Chief Nuclear Officer and Mr. A. Christopher Bakken, III, Senior Vice President- Nuclear Operations, to bring fundamental change to the work environment. As you note in your letter, these ongoing efforts are beginning to make positive change at Salem and Hope Creek.

These three elements of our response are discussed below in more detail.

1. Independent Assessment Team

In response to the request in your letter, PSEG has assembled an Independent Assessment Team ("Assessment Team"). The Assessment Team will (1) assess the work environment at Salem and Hope Creek, including the effects on the work environment of operational decision making and problem identification and resolution, (2) review the sufficiency of management's initiatives to assess the work environment, (3) review the sufficiency of management's efforts to further enhance the work environment, (4) review the impact of the corporate-site interface on the work environment at the site, and (5) make recommendations as appropriate to senior management. The Assessment Team consists of former senior industry executives and regulators, with extensive management, regulatory or operating experience. The Assessment Team is being led by James O'Hanlon, most recently President and Chief Operating Officer of Dominion Energy, and previously the Chief Nuclear Officer at Dominion. Mr. O'Hanlon is also the lead in assessing the site-corporate interface. Jacques Durr, former NRC Region I manager, is the lead in addressing work place issues reflected in the NRC inspection record and also the effects of any unresolved conflicts. Wayne Kropp, former NRC Region III manager, is the lead member for problem identification and resolution. Neil Bergh, currently the PSEG Nuclear QA manager, is the lead member for assessment of PSEG Nuclear programs, such as the Employee Concerns Program (ECP), and will coordinate with the USA assessment. Barry Letts, former NRC Field Office Director, Office of Investigations, Region I, is assisting the Assessment Team in fact-finding interviews, including those associated with unresolved conflict. Joseph Callen, former NRC Executive Director for Operations, Michael Tuckman, former Duke Power Chief Nuclear Officer, and William Cottle, former Chief Executive at South Texas Nuclear Operating Company, are available to review plans, results and recommendations at the request of the Assessment Team or PSEG management.

The independent assessment will involve structured interviews of current and former PSEG personnel, with nuclear plant site and corporate responsibilities, document reviews, and analysis of the relevant information. The Assessment Team's review will also encompass the results of recent PSEG initiatives to better diagnose the site work environment. As indicated above, in the fall of 2003, PSEG Nuclear commissioned Synergy to conduct a comprehensive survey of the site in December 2003

in order to gain insight into both the safety culture and broader work place issues. We received the results of Synergy's survey in January 2004. Synergy's team leader is available to the Assessment Team for advice and consultation regarding the Synergy results. In addition, in late 2003, PSEG Nuclear requested the USA to conduct a safety culture assessment in part to evaluate the effectiveness of actions taken by PSEG Nuclear to improve the work environment. The USA assessment team is currently reviewing relevant documents and the onsite portion of the assessment begins next week. The preliminary results of the USA assessment are expected in the middle of March.

The Assessment Team will conduct a review of the following areas and make recommendations:

- (a) Analyses of events involving operational decision making and unresolved conflict, including events involving the corporate-site interface;
- (b) Selection of interview populations based upon any such events that may have negatively affected the work environment, as well as any pockets of concern identified in the Synergy survey or the USA assessment. Initially, approximately 60 interviews are being scheduled. Based on the results of these initial interviews, a determination will be made if additional interviews should be conducted. The interviews have begun with an emphasis on Operations personnel;
- (c) ECP Performance Indicators and survey results; and
- (d) The NRC inspection record, including cross-cutting issues, and sampling to ensure adequate and timely closure of inspection findings and indicated program enhancements.

The Assessment Team's analysis, findings and recommendations will be developed in a logical framework consisting of the four basic elements of a SCWE: (a) employee willingness to raise concerns; (b) management effectiveness in resolving safety issues; (c) ECP effectiveness; and (d) management effectiveness in resolving retaliation and chilling effects issues. This framework will be augmented by "Best Practices to Establish and Maintain a Safety Conscious Work Environment" posted on the NRC's website and other industry-wide guidance.

The Assessment Team will provide recommendations in consideration of the following areas:

- (a) Policies, procedures and metrics implementing PSEG's expectations to maintain a SCWE with respect to the four basic elements noted above;
- (b) Training as to those policies and procedures, including general site access training, periodic refresher training, and supervisory skills training;

- (c) The effectiveness of the Corrective Action Program (CAP) and any management actions to improve CAP effectiveness;
- (d) The effectiveness of the ECP, including, to the extent possible, any correlation to concerns raised to NRC, ECP, and the CAP;
- (e) The interface among Human Resources, Labor Relations, and line management in addressing work place issues;
- (f) The interfaces and interactions between corporate office personnel and site personnel and the impact of those interfaces and interactions on the work environment at Hope Creek and Salem;
- (g) The number, nature, and trend in NRC allegations, including NRC referred allegations and PSEG's response to these referred allegations; and
- (h) Claims of retaliation over the past several years, including management actions to address any chilling effect in response to such claims.

Based upon the composition of the Assessment Team, the methods of assessment and objectives, we are confident that the Assessment Team will comprehensively assess the current work environment within PSEG for raising and addressing concerns and management's initiatives to address issues in this area. We are similarly confident that the Assessment Team will provide meaningful and constructive recommendations to further enhance the work environment.

I anticipate that the Assessment Team's fieldwork will be completed by mid-April 2004, at which time the Assessment Team will provide its findings and recommendations to me, to Frank Cassidy, President of PSEG Power, and to Messrs. Anderson and Bakken. Senior PSEG Nuclear leadership will integrate those recommendations into ongoing efforts to improve the site work environment and assure that specific actions are documented in our CAP or Business Plan as appropriate. Mr. Cassidy and Mr. R. Edwin Selover, Senior Vice President and General Counsel of PSEG, will be responsible for implementing recommendations related to the corporate-site interface. I anticipate that PSEG will be in a position to brief the NRC concerning our actions by mid-May 2004.

As stated in my February 13, 2004 letter to you, the Assessment Team will keep me informed of its activities. Mr. Cassidy and I will provide close oversight of this effort and continue to report on it to the Nuclear Committee of our Board of Directors. In this regard, the Nuclear Committee and the Board of Directors will hold their March meetings at the Salem and Hope Creek site. This was previously scheduled as part of our normal practice to periodically hold Board meetings at the nuclear plant site. The meetings will be structured to provide interface among the Board, senior management and site personnel and to emphasize the importance of safe and reliable operation through all levels of the organization.

2. Immediate Actions in Response to NRC 1/28/04 Letter

In order to emphasize the importance of the issues raised in your letter and to give greater impetus to our ongoing initiatives, we have taken or have underway the following immediate actions:

- (a) We have held focused meetings with managers and supervisors to explain the importance of your January 28, 2004 letter;
- (b) Mr. Anderson has already discussed the importance of your letter in two sets of all-hands meetings where he reinforced his expectation that finding and fixing our own problems is what "keeps us safe." This was stated in the context of reinforcing PSEG's responsibility to protect the health and safety of the public and NRC's role in assuring the public that PSEG meets its obligation;
- (c) During the second set of the two sets of all-hands meetings, Mr. Anderson stressed the need to focus on the fundamentals of SCWE, Industrial Safety, Communications/Relationships, CAP Effectiveness and Equipment Reliability;
- (d) We are consolidating our existing requirements for a SCWE into a formal overall SCWE policy. This will assist us in placing emphasis on the importance of a SCWE and in effectively integrating our existing activities. This Policy will be carefully structured to assure that everyone on the site understands his or her responsibility for a SCWE. This policy will be formally adopted in the near future, and a roll-out and training program will convey its substance and importance to all site personnel, including contractors;
- (e) We are continuing to reinforce the importance of finding and fixing our own problems through the open letters to site personnel that are written by Mr. Anderson; and
- (f) We have also modified our plan for this spring's outage at Salem Unit 1 to prioritize the completion of many on-line corrective maintenance items. This increased outage scope should help reinforce the priority of safety and reliability over production to the workforce and demonstrate PSEG's commitment to address the maintenance backlog, operator burdens and control room instrument improvements. In parallel, our broader initiatives include actions to improve the planning, scheduling and quality of maintenance in order to improve our effectiveness in resolving equipment issues during outage and non-outage periods.

3. Ongoing Actions Under New Management to Improve Performance

PSEG recognizes that it needs to improve and that fundamental and lasting change takes time. We began actively addressing the need for change in 2003 with new leadership and a site reorganization. By the summer of 2003, the new management had redesigned the site organization and established the new structure. Staffing of the new organization was carefully performed to augment existing management personnel with experienced managers brought in from the outside. Other managers were chosen to fill positions based on their skills and the requirements of the position they were selected to fill. As we proceed, further changes will be made as required to improve accountability, assure that the workforce feels free to raise issues, that issues are addressed, and that the results are communicated. The purpose of the reorganization is to align our structure and staffing with our mission: "We Will Be Recognized as the Best Run Energy Business Wherever We Compete - We Will Be Known for Our Leadership in Safety, Reliability, Environmental Stewardship, and Shareholder Value."

As we completed the reorganization, we designed a hierarchy of metrics to evaluate the performance of departments and jobs. These metrics will provide the workforce a clear understanding of individual roles and responsibilities to improve accountability and create a clear "line of sight" from the mission statement to the roles and responsibilities of individual workers. This model has been explained and subsequently reinforced at all-hands meetings that are regularly held by Mr. Anderson. We are measuring our progress against these metrics, and we are developing metrics to measure our efforts to enhance the SCWE. We will analyze the gaps between performance and these standards and hold people accountable for their performance.

An early step in our new management team's effort was to improve the strategic planning process. This effort started in 2003 and is yielding positive results in 2004. Specifically, we have in place fully funded plans to focus and improve safety culture relative to the Corrective Action Program, Industrial Safety, Operational Focus/Decision Making and Working Relationships. We are also taking actions to improve reliability with actions to establish a Culture of Low Tolerance for Equipment Failures, to build a High Performance Maintenance Team, to improve the Effectiveness of Work Management, to resolve Long Standing Equipment Issues and to establish a Life Cycle Management Program. The next level of detail consists of action plans to address specific aspects of the above areas. For example, a Corrective Action Program improvement plan has been initiated that identifies areas for improvement in CAP. Additionally, in 2003 we completed more than one thousand actions in our Corrective Action Program related to improving the plant and industrial safety.

Our planning process is strategically focused over a five-year period and is updated annually during the budget cycle. This is intended to ensure that resources are available for improvement initiatives and projects that will take more than one year to complete. The various parts of the Plan were developed by the responsible organizations and approved by the appropriate management. The action plans include expected results, schedule and relevant performance indicators. Similarly, we have established seven

working level interdisciplinary teams to review the results of the Synergy survey and develop workable, meaningful improvements in our work environment.

Our approach, coupled with our willingness to further evaluate our plans, reflects our recognition that an essential component of assuring safe operation is a safety conscious work environment. I also recognize that it is important to provide the capital needed to maintain and improve the material condition of PSEG's nuclear plants. Management must provide the resources and the workforce must see expenditure of those funds in a manner consistent with having safety as the highest priority. In this regard, I previously mentioned in my February 13, 2004 letter to you, our substantial and ongoing plan for maintenance and capital improvement at the site.

At the meeting with Region I in March 2004, Frank Cassidy, along with Messrs. Anderson, Bakken, other key site leaders, and representatives from the Assessment Team, will be prepared to brief you on our current improvement efforts in more detail. They will describe how we plan to measure our progress, provide an update on the Assessment Team's work, and answer your questions. The management team's objective for this meeting is to reach a common perspective on the issues and that our plans will address them.

We will keep you apprised of our progress. I would be glad to have you come to the site to personally view our progress. In the interim, or at any time as we go forward, if you have any questions or need to talk about any matters, please call Frank Cassidy, Roy Anderson or me directly.

Very truly yours,



Salem & Hope Creek Distribution List

**Mr. H. J. Miller, Administrator - Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406**

**Mr. John Boska, Licensing Project Manager – HC
U.S. Nuclear Regulatory Commission
One White Flint North
Mail Stop O8B1
Washington, DC 20555-001**

**Mr. R. Fretz, Licensing Project Manager - Salem
U. S. Nuclear Regulatory Commission
One White Flint North
Mail Stop O8B2
11555 Rockville Pike
Rockville, MD 20852**

USNRC Senior Resident Inspector - HC (X24)

USNRC Senior Resident Inspector - Salem (X24)

**Mr. K. Tosch, Manager IV
Bureau of Nuclear Engineering
PO Box 415
Trenton, NJ 08625**

HOPE CREEK
NRC INSPECTION FINDINGS

Deficiency	Finding
10CFR 50.63: Failure to consider design information (SBO coping) in OD. (Engineering) 18.	SBO coping analysis was not considered in the OD for a steam leak in HPCI room. Report No. 2003002
Criterion III DESIGN CONTROL Failure to translate design information into design documents. (Engineering) 6.	Failure to ensure that EDG design specs were translated into design documents. Report No. 2003004*
Non-conservative design assumptions used in HPCI surveillance test. (Engineering)15.	Inadequate acceptance limits for HPCI quarterly operability surveillance testing for pump flow. Report No. 2003002
Incorrect and non-conservative design information is translated into a procedure. (Engineering) 20.	Incorrect and non-conservative design information is translated into the SRV tailpipe temperature procedure. Report No. 2003006
Criterion V Procedures: Improper cutting of key without procedure guidance. (Maintenance) 19.	Maintenance did not follow the SSWS travelling screen procedure. Report No. 2003006
Criterion XVI Corrective Actions:: Inadequate maintenance/ post maint. testing (Maintenance)1. Not a violation.	Electro-hydraulic control oil leak in No. 4 combined intermediate valve results in manual scram. Report No. 2003007*
Failed to initiate timely corrective actions to transient. (Operations)2.	Minor power, pressure and level excursion results in larger operational transient. Report No. 2003003
Engineering performed inadequate evaluations and corrective actions (Engineering)3.	Residual heat removal system minimum flow valve cycling during RHR pump starts. Report No. 2003007*
Uncompleted corrective actions (Maintenance)4.	The "B" control room chiller tripping when placed in service. Report No. 2003007*
Untimely corrective actions (Engineering)5.	Low pressure coolant injection suction relief valve was not thoroughly evaluated for extent of condition. Report No. 2003004*
Maintenance improperly repaired the EDG 3 times. (Maintenance)6.	Incorrect maintenance procedure to replace the A EDG intercooler pump seal. Report No. 2003004*
Failed to take corrective actions on an observed deficient condition. (Engineering, System)7.	High pressure coolant injection system lubricating oil pressures were degraded in multiple tests. Report No. 2003003

Failed to provide assurance that ADHR method was in place. (Engineering/ Operations)8.	Did not follow through on corrective actions regarding adequate stroking of all applicable alternate decay heat removal valves .Report No. 2003003
multiple Notifications without resolution. (Maintenance)16.	Failure to identify and correct problems with the HPCI lube oil temperature monitoring.. Report No. 2003002*
Criterion XI Test Control: Failed to provide acceptance criteria in test procedure. (Engineering)9.	Safety auxiliary cooling system heat exchanger testing does not provide acceptance limits. Report No. 2003004*
Tech. Spec. 3.7.2: Inadequate tagging boundary. (Work Control) 10.	Testing of the A control room ventilation system made both the A and B crvs's inoperable. Report No. 2003003*
Tech Spec 4.5.1 Failed to include valve in ECCS surveillance procedure (operations)17.	Incomplete HPCI valve position verification to satisfy Tech Spec requirement. Report No. 2003002*
Tech. Spec. 4.8.1.1.2: Failed to translate the Tech Spec requirement into surveillance procedure. (Operations) 11.	Did not verify the fuel oil transfer pump transfer capability from each fuel oil storage tank. Report No. 2003004*
Failed to translate the Tech Spec requirement into the surveillance procedure. (Maint.) 12.	Inadequate testing of the EDG lockout relays. Report No. 2003002*
Tech. Spec. 6.8.1: <u>Failure to follwo EOP's post scram.</u> (Operations) 13.	A control room supervisor issued an order that conflicted with the emergency operating procedures for the Post scram water level control. Report No. 2003004*
Failed to adequately control the work process and associated fire protection provisions. (Work control) 14.	Ineffective work control regarding the automatic fire suppression system for the C EDG resulted in the CO ₂ being out of service. Report No. 2003005*

SALEM 1
NRC INSPECTION FINDINGS

Criterion III, Design Control	Increased likelihood of a loss of offsite power due to inadequacies during plant modifications, set point changes and revisions of calculations associated with the 4160 volt power systems. Report No. 2003008
	Failed to include the appropriate steps in the procedure for a modification of the Unit 1 /2 chemical and volume control system. Report No. 2003008
	Temporary modifications to the 22 auxiliary feedwater pump and the 13 AFW pump skids were not properly evaluated. Report No. 2003003
Criterion V, Procedures	Failure to follow the FME procedure allowed a bolt to jam the feedwater regulating valve making it inoperable. Report No. 2003009
Criterion XVI, Corrective Actions	Failed to implement adequate corrective actions to address design issues following the July 29,2003 loss of offsite power. Report No. 2003008
	Salem Units 1/ 2 experienced a control air transient as a result of an incomplete control air preventive maintenance item and inadequate corrective actions. Report No. 2003003
	Failure to take effective corrective action for corrosion products in the control air system resulted in the Unit 2 chilled water compressor tripping. Report No. 2003009
	Service water pump strainer tripped due to ineffective corrective actions. Report No. 2003009
	Failure to promptly identify and correct a leak from the spent fuel pool. Report No. 2003006
	Failure to correct a service water valve air actuator leak. Report No. 2003005
	Failure to promptly identify a throttled auxiliary feedwater flow control valve air supply. Report No. 2003005

	Inadequate maintenance practices resulted in recurrence of a service water valve motor operator failure. Report No. 2003005
Criterion XVI, Corrective Actions (cont.)	Failure to identify emergency diesel generator room roof leaks. Report No. 2003003
	The emergency diesel generator tripped due to a known electrical connector problem and inadequate interim corrective actions. Report No. 2003003
	Failure to implement corrective actions for wires located in the control room panels from an over current condition and a degraded component cooling water system pipe support. Report No. 2003004
	Failure to implement corrective actions for repetitive fuel oil leaks on the emergency diesel generators. Report No 2002010
	Ineffective corrective actions led to recurrence of the emergency diesel generator turbocharger failure. Report No. 2002010
Tech Spec. 4.0.5	Failure to establish stroke time reference values for the containment fan coil units. Report No. 2003005
Tech. Spec. 6.8.1	Failure to perform maintenance in accordance with the procedure for the 13 auxiliary feedwater pump causing a trip. Report No. 2003007
21.	Failure to follow the test procedure for the PORV. Report No. 2003005
	Failure to properly perform maintenance on the component cooling cross connect valve 1CC17

SALEM 2
NRC INSPECTION FINDINGS

Criterion III, Design Control	Increased likelihood of a loss of offsite power due to inadequacies during plant modifications, set point changes and revisions of calculations associated with the 4160 volt power systems. Report No. 2003008
	Failed to include the appropriate steps in the procedure for a modification of the Unit 1 /2 chemical and volume control system. Report No. 2003008
	Temporary modifications to the 22 auxiliary feedwater pump and the 13 AFW pump skids were not properly evaluated. Report No. 2003003
Criterion XVI, Corrective Actions	Deferral of a vendor recommended design change on the control rod drive mechanisms led to a manual reactor trip due to dropped control rod. Report No. 2003003
	Failed to implement adequate corrective actions to address design issues following the July 29,2003 loss of offsite power. Report No. 2003008
	Salem Units 1/ 2 experienced a control air transient as a result of an incomplete control air preventive maintenance item and inadequate corrective actions. Report No. 2003003
	A compressor air leak on the starting air system for the A EDG was not properly evaluated before removing the other compressor from service for maintenance. Report No. 2003009
	Ineffective problem evaluation of air pockets in the residual heat removal system resulted in a waterhammer on the RHR and CS systems. Report No. 2003009
	Delayed corrective actions from 5/02 to 11/03 for the water hammer on the RHR system. Report No. 2003009

	The emergency diesel generator tripped due to a known electrical connector problem and inadequate interim corrective actions. Report No. 2003003
	Failure to implement corrective actions for wires located in the control room panels from an over current condition and a degraded component cooling water system pipe support. Report No. 2003004
Tech. Spec. 6.8.1	Failure to follow a testing procedure for the pressurizer spray valve 2PS3. Report No. 2003005
	Untimely placement of identified steam generator tube plug deficiencies into the corrective action program. Report No. 2003009