North Atlantic

North Atlantic Energy Service Corporation
P.O. Box 300
Seabrook, NH 03874
(603) 474-9521, Fax (603) 474-2987

The Northeast Utilities System

Ted C. Feigenbaum
Senior Vice President &
Chief Nuclear Officer

NYN- 94036

April 8, 1994

United State Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

References:
(a) Facility Operating License No. NPF-86, Docket No. 50-443

(b) USNRC Letter dated January 3, 1994, "Inspection No. 50-443/93-13," L. T. Doerflein to T. C. Feigenbaum

(c) North Atlantic Letter NYN-93132 dated September 30, 1993, "Reply to a Notice of Violation," T. C. Feigenbaum to USNRC

(d) North Atlantic Letter NYN-93153 dated November 3, 1993, "Supplement to a Reply to a Notice of Violation," T. C. Feigenbaum to USNRC

(e) USNRC Letter dated August 31, 1993, "Inspection Report No. 50-443/93-13," A. R. Blough to T. C. Feigenbaum

Subject: Second Supplement to a Reply to a Notice of Violation

Gentlemen:

In a letter dated January 3, 1994 [Reference (b)], you acknowledged North Atlantic Energy Service Corporation's (North Atlantic) responses [References (c) and (d)] to a Notice of Violation [Reference (e)], for two occurrences where personnel did not implement station procedures as required. These responses described the efforts of the North Atlantic Personnel Error Response Team (PERT) and the resultant PERT recommendations to prevent recurrence. Your letter requested a supplemental response when specific corrective actions and completion schedules had been developed to address the PERT recommendations.

North Atlantic has completed its review of the PERT recommendations and has developed specific corrective actions to prevent recurrence. These corrective actions have been coordinated with those actions being taken by North Atlantic to address trip reduction, procedure compliance, and procedure quality. An integrated approach was chosen in order to expeditiously and efficiently correct these concerns and to facilitate ownership by all North Atlantic personnel. Accordingly, the enclosure describes the detailed PERT corrective actions and their associated completion schedules. The original PERT findings and recommendations are provided for convenience. Also enclosed is the PERT teams first quarterly assessment of the effectiveness of the corrective actions implemented in response to their recommendations.

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I am confident that our corrective actions will effectively address the underlying issues, thereby improving personnel and operating performance. Throughout the implementation of these corrective actions, their effectiveness will be monitored and assessments will be made to determine if they should be modified to more accurately address the issues or whether other additional actions should be taken. Additionally, upon completion of these actions, their effectiveness at correcting the underlying issues will be verified. If these actions are deemed ineffective for any reason, an evaluation will be performed to determine the reason for the failure, and this information will be utilized to formulate supplementary actions to correct the issues. Many of the corrective actions are on-going and management will continue to reinforce our expectations on these issues. North Atlantic management will reinforce these actions, as necessary, to bolster its expectations with respect to human performance at Seabrook Station to ensure good results.

Should you have any questions concerning this matter, please contact me or Mr. Terry L. Harpster, Director - Licensing Services, at (603) 474-9521, extension 2765.

Very truly yours,

Ted C. Feigenbaum

TCF:JES/jes

Enclosures

cc: Mr. Thomas T. Martin
Regional Administrator
United States Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. Albert W. De Agazio, Sr. Project Manager
Project Directorate I-4
Division of Reactor Projects
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Antone C. Cerne
NRC Senior Resident Inspector
P.O. Box 1149
Seabrook, NH 03874

PERT CORRECTIVE ACTIONS

The following describes corrective actions that North Atlantic is implementing to address the issues and recommendations contained in the Personnel Error Response Team (PERT) report. The original PERT issues and recommendations are repeated for convenience.

Cultural Issues

Issue 1C: Personnel errors are tolerated and rat ed as being acceptable. They are shielded from scrutiny by overemphasis on cor iality, with resultant lack of accountability.

Note: Management must provide a reaffirmation of North Atlantic's policy on discipline. The reaffirmation should delineate the distinction between non-disciplinary activities, such as performance coaching and counseling, and disciplinary actions, such as verbal/written reprimand and suspension/termination.

Recommendations:

- Management's expectations should be verbally communicated frequently and visibly.

- Establish accountability and promote open communication.

  - Personnel involved in an incident related to human error should prepare a presentation on the incident to be delivered at a department meeting or during a session of requalification or continuing training.

  - Develop a basic outline, or agenda, for the presentation which is based on answering Who?, What?, Where?, When?, and providing action recommendations designed to prevent recurrence.

  - The manager, department head, or supervisor responsible for personnel involved in an incident related to human error should deliver a presentation on the incident to the Station Manager's daily meeting or the weekly Group Managers' meeting.

  - Interdepartmental communication on operating experiences should be improved by implementing the following action.

    Make operating experience, including specific incidents in the industry or at Se brook, a topic for presentation and discussion at each weekly Group Managers' meeting. The first presentation should include a general discussion on preparing and interpreting trend charts, with following presentations using trend charts to support interpretations of current operating experience. Publish the content of the presentations in the Station Manager's Messenger.

Corrective Actions:

1. North Atlantic has conducted a series of meetings with employees to provide first hand communication of the North Atlantic philosophy regarding accountability, zero tolerance for error, and

the desired culture. These meetings, which were intended for all North Atlantic employees, were conducted by the Senior Vice President and Chief Nuclear Officer, and the Station Manager. Meetings have currently been conducted for the majority of North Atlantic employees. Make-up meetings will be held for those individuals that were unable to attend the prior meetings. These meetings are regarded as the first phase of this process.

The second phase is for the individual group managers to conduct follow-up department specific meetings to reinforce the concepts espoused in the first meeting and to provide department specific examples. The objectives of the second phase are to obtain ownership of the problem across the entire organization and to enable employees to visualize the future culture. It is anticipated that these meetings will be completed by April 12, 1994.

The third phase involves additional follow-up meetings between management and employees to assess acceptance of the cultural change, and to resolve any disbeliefs, confusion, or lack of acceptance of the need for cultural change. It is anticipated that all phases of this process will be completed by August 10, 1994. Notwithstanding the above initiatives, North Atlantic will continue to reinforce management's expectations with the organization on an on-going basis.

2. North Atlantic will ensure that management's expectations regarding accountability, zero tolerance for error, and the desired culture, are provided to contract resource personnel designated for the upcoming refueling outage. This information will be provided via Senior and middle management briefings to contract personnel as designated by the Station Manager. It is anticipated that this action will be completed by April 20, 1994.

3. North Atlantic will develop, administer, and analyze the results of a climate survey that will provide information on prevailing cultural values within the organization. This survey will also help communicate the importance of the requisite cultural change. The information provided by the climate survey will be included in the PERT effectiveness reports. (See Issue 1M).

4. North Atlantic will revise the Seabrook Station Operating Experience Manual (SSOE) to describe how errors and lessons learned will be communicated to the organization, how they will be analyzed including proceduralizing the post event evaluation in accordance with the Methodology-Event Reduction Evaluation, and how corrective action documents relate to the STAR self verification program. It is anticipated that the revised SSOE will issued by April 15, 1994.

5. The North Atlantic Management Manual (NAMM) will be revised to document and implement a process to assess the effectiveness of corrective actions taken in response to post event recommendations. This is described under Issue 2C below.

6. In order to establish accountability and promote open communication, North Atlantic is requiring personnel involved in selected incidents related to human error to prepare a presentation on the incident and deliver it at a department meeting or during a session of requalification or continuing training. This presentation follows a basic outline, or agenda, based on answering Who?, What?, Where?, When?, and providing action recommendations designed to prevent recurrence. The manager, department head, or supervisor responsible for personnel involved in the aforementioned selected incidents related to human error may also be requested to deliver a presentation on the incident at the Station Manager's daily meeting or at the weekly Group Managers' meeting. North Atlantic is currently conducting the aforementioned presentations for selected incidents.

7. North Atlantic is enhancing interdepartmental communication on operating experiences by making operating experience, including specific incidents in the industry or at Seabrook, a topic for presentation and discussion during either weekly Group Managers' meetings or the Station Manager's morning meeting. This process will be documented in the revised SSOE, which is scheduled to be issued by April 15, 1994. Additionally, operating experience information is currently being disseminated to North Atlantic personnel via an operating experience newsletter.

Issue 2C: Absence of management's attention and priority for incidents leads to lack of ownership and responsiveness to activities, with inability to effectively institute corrective actions.

Recommendations:

- Proceduralize a post event evaluation in accord with Methodology-Event Reduction Evaluation.
- Develop and implement a process to assess the effectiveness of corrective actions taken in response to post event recommendations.
- Management's expectation message needs to include content, priority, ownership, and responsiveness to incidents, particularly those involving personnel error.
- Evaluate the effectiveness of the Maintenance Improvement Plan (MIP) as related to the reduction of personnel error.
- The Station Manager needs to more frequently require a Human Performance Enhancement System (HPES) evaluation of incidents.

Corrective Actions:

1. North Atlantic will update and reissue the Maintenance Improvement Plan (MIP). The MIP provides guidance on good industry practices as they relate to maintenance activities. This update will specifically include the reduction of personnel errors as they relate to maintenance activities. The revised MIP will address areas such as personnel development, maintenance effectiveness, tools and facilities, programs and procedures, resource utilization, communication, and self assessment of maintenance performance. It is anticipated that the revised MIP as related to personnel errors will be issued by April 8, 1994.

2. North Atlantic will revise the North Atlantic Management Manual (NAMM) to include guidelines to assess the effectiveness of corrective actions taken in response to post event recommendations. All North Atlantic departments are responsible for assessing the effectiveness of corrective actions. Additionally, the Quality Programs organization will be responsible for independently assessing the effectiveness of corrective actions that are documented in corrective action documents such as the Station Information Report (SIR), Operational Informational Report (OIR), and Condition Report (CDR). The effectiveness review will be performed on a sample basis as part of Quality Program's normal inspection, surveillance and audit activities. It is anticipated that these guidelines will be issued by April 8, 1994.

3. In October 1993, North Atlantic reassigned a full-time Human Performance Enhancement System (HPES) Coordinator. The HPES is a problem solving system that uses various techniques to identify the causes of inappropriate actions and to provide recommendations to prevent such actions from recurring. The use of HPES techniques allows all personnel to benefit from the experience of others and contributes to improved safety, reliability, teamwork, and communications.

4. North Atlantic has trained a number of personnel on HPES evaluation techniques in order to assist the HPES Coordinator in performing evaluations. This has enabled North Atlantic to increase the number of HPES evaluations performed for incidents involving personnel error. North Atlantic has also lowered the threshold for occurrences that may warrant HPES evaluations, and hence, more evaluations are being performed.

Issue 3C: Upper management is sometimes insulated from the exact details of an event due to incomplete documentation of event information.

Recommendations:

- Include nonconfidential portions of the HPES report in Operational Information Reports (OIRs) and/or Station Information Reports (SIRs).

- Include the Stop, Think, Act, and Review (STAR) Worksheet in reports.

  (Note: References to people identified by name could be removed from HPES and STAR information that is included in other reports.)

- Managements's expectation message should address the issue of open and candid communication. Management should adopt a "Tell it like it is" policy.

- Revise the Station Operating Experience Manual (SSOE) to require a Cause and Failure Analysis for events.

Corrective Actions:

1. North Atlantic has adopted a "tell it like it is" policy. In order to support this, nonconfidential portions of the HPES reports are being included in corrective action documents such as the OIR and the SIR. Similarly, STAR worksheets are also being included in such documents. People's names are typically redacted from these documents prior to publication.

2. North Atlantic will also revise the Station Operating Experience Manual (SSOE) to require a Cause and Failure Analysis for all occurrences that meet the OIR or SIR threshold. This revision will also require HPES reports to be included in OIRs and SIRs. It is anticipated that the revised SSOE will be issued by April 15, 1994.

Programmatic Issues

Issue 1P: The Stop, Think, Act, and Review (STAR) Program is ineffective.

Recommendations:

- Develop and implement a site-wide (not limited to just the Station) program on self verification to achieve the following objectives:

  - improvement in awareness,
  - direct linkage with OIRs and SIRs,
  - timely development of STAR worksheets, and
  - worksheet distribution identified.

Corrective Actions:

1. North Atlantic has developed and implemented the STAR Program for all company personnel. As described in the aforementioned recommendation, this self-verification program achieves the following objectives:

- improves personnel awareness of errors;
- provides a direct linkage with corrective action documents, such as OIRs and SIRs;
- assures the timely development of STAR worksheets; and
- identifies STAR worksheet distribution.

Self-verification techniques have been proven throughout the industry to reduce performance errors. An employee who consistently demonstrates excellence in the workplace practices self verification or checking.

North Atlantic had previously implemented the STAR Program for personnel in the Operations Department. The STAR Program, which is documented in North Atlantic Procedure NAMM 12340, was revised in February 1994 to be applicable to all North Atlantic personnel. Additionally, a presentation on the STAR Program has been given to managers and most supervisors. These individuals will, in turn, provide a presentation on the STAR Program to their department personnel. These presentations will address how self verification techniques can be utilized by all North Atlantic personnel. It is anticipated that the presentation on the STAR Program will be completed by April 18, 1994.

2. STAR worksheets are an integral part of the program since they are utilized to record and communicate personnel errors or near misses to the rest of the organization. This ensures that everyone in the company has the opportunity to benefit from the lessons learned. Examples of both personnel errors and good performances are currently being disseminated to the organization via internal corporate newsletters. In addition, a STAR worksheet data base has been established to compile all of the worksheets. This allows the organization to easily access information on personnel errors and near misses.

3. North Atlantic will also utilize an awards program as part of the STAR Program. This will act as a positive incentive for proper use of the program. It is anticipated that this program will be implemented by May 1, 1994.

Issue 2P: The Supervisory Walk-Down Program is ineffective.

Recommendations:

Revise the Supervisory Walk-Down Program to include needed structure and appropriate portions of the Northeast Utilities program.

- Define program objectives that encompass more than housekeeping and safety. For example, define objectives for:

  Procedure Adequacy
  Procedure Compliance
  Job Performance
  Personnel and Equipment Concerns
  Programmatic Issues

Corrective Actions:

1. North Atlantic is currently revising the Supervisory Walk-Down Program to expand its scope beyond housekeeping and safety issues. The revised Supervisory Walkdown Program, which will be described in Station procedure SM 7.3, will provide periodic management oversight of plant conditions and work activities during the normal work week plus backshifts, holidays, and weekends. The program is designed to identify potential safety problems, verify proper housekeeping practices, find adverse plant material conditions, observe work-in-progress for procedure adequacy/compliance and good workmanship practices, determine STAR Program effectiveness, and to identify programmatic concerns that could affect personnel safety or the continued safe operation of the plant.

It is anticipated that North Atlantic issue the revised Supervisory Walkdown Program in the near future and fully implement this program by July 1, 1994.

Issue 3P: Overly complex processes, programs, and procedures.

Recommendations:

- The work control program should be improved through communication and feedback among the key applicable organizations. The Work Control Interface Committee (WCIC) should be the focal point for this effort and use specific examples of problems, or enhancement ideas, to improve work package quality by designating appropriate level of instruction, documentation, program guidance, format, and package size.

- Implement Procedures Task Force recommendations.

- Complete implementation of the recommendations of Configuration Control Task Force II.

- Evaluate results of Northeast Utilities' Performance Enhancement Program (PEP) as they relate to Work Control.

Corrective Actions:

1. North Atlantic has tasked the Work Control Interface Committee (WCIC) with improving the existing Work Control Program. While the existing program is successful at providing the worker with all the required procedures, drawing, notes and instructions required during the execution of a task, it does not explicitly inform the worker what information is most important and specifically applicable to the task at hand. The WCIC has communicated with all pertinent disciplines to obtain feedback and determine areas that could benefit from enhancement. An example of an enhancement is the improvement of work package quality by designating appropriate level of instruction, documentation, program guidance, format, and package size. It is anticipated that a proposal describing potential enhancements to the Work Control Program will be issued by April 12, 1994.

2. North Atlantic is in the process of implementing a procedure improvement program. This program is based on the recommendations of a task force that has evaluated the existing procedure program. The procedure improvement program recognizes the importance of clarity and simplicity, and has the ultimate goal of making site procedures easier to use. The program will consolidate the present North Atlantic Manuals System and Station Manuals System into a single North Atlantic Manual System. Additionally, the procedure improvement program will implement procedure related recommendations

resulting from the Attention-to-Detail, Procedure Compliance, Configuration Control, and PERT task forces. Under the procedure improvement program, a total of 3000 procedures will be revised in approximately four years with work beginning July 1994.

Management Oversight Issues

Issue 1M: Lack of follow-up on Corrective Actions.

Recommendations:

- Develop a system of priority for responding to events and for reviewing the effect of corrective actions. The highest level of priority should be designated for safety related events. The lowest level of priority should be designated for housekeeping-related problems.

- Develop and implement a review process for OIRs and SIRs which requires that the responsible manager assigned to an OIR or SIR must prepare to meet with the Station Manager to discuss the resolution of the issues involved, if requested.

- PERT must ensure that the actions implemented by the Station manager in response to the PERT recommendations are effective. Three to four months after a majority of the actions have been implemented, PERT will:

  - evaluate the effectiveness of each action,

  - evaluate the effectiveness for the combined impact of all the actions, and

  - make suggestions to the Station Manager for any changes needed to improve the actions.

Corrective Actions:

1. North Atlantic will utilize the following four tools to prioritize and review the affect of corrective actions: The Occurrence Review Committee, Management self assessment, Root cause analysis, and the Commitment Management Program. As described below in Issue 2M, the Occurrence Review Committee reviews corrective action documents and determines event significance and preliminary cause. Management Self Assessment (see below) will be utilized to assess the effectiveness of corrective actions. The increased use of root cause analysis ensures that adequate corrective actions are developed. Additionally, the Commitment Management Program is currently being used to track the completion of corrective actions.

2. North Atlantic is implementing a review process for OIRs and SIRs that requires the responsible manager assigned to an OIR or SIR to meet with the Station Manager to discuss the resolution of the issues involved, if requested. This process will be documented in the revised SSOE, which is scheduled to be issued by April 15, 1994.

3. The PERT Team has developed a PERT Effectiveness Assessment Plan to evaluate the effectiveness of each PERT corrective action, evaluate the effectiveness for the combined impact of all the actions, and make suggestions to the Station Manager for any changes needed to improve the actions. This plan defines a set of success statements, or criteria, that will be utilized to judge the effectiveness of PERT corrective actions. This plan also assigns responsible PERT Team members to perform

effectiveness assessments, and delineates specific activities/methods for measuring success. The PERT Team will publish quarterly reports to management on the effectiveness of the PERT corrective actions until the PERT team is disbanded.

4. North Atlantic has assigned a team to develop a set of guidelines to encourage and expand self assessment at the department level. This team is working with all departments to evaluate self assessment options. It is anticipated that a draft program will be developed by May 29, 1994.

5. North Atlantic intends to provide training on the self assessment program once it is finalized. The training will be provided to departments as required to address the program's scope. It is anticipated that this training will take place in October 1994.

6. Additionally, North Atlantic will trend self assessment data after the program has been established. It is anticipated that trending will be performed by the end of 1994.

Issue 2M: Too many conflicting trend reports.

Recommendations:

- Develop specific performance measurement indicators having a statistically significant correlation to work activity, e.g., the number of personnel errors per RTS completed as computed by the following ratio:

$$\frac{\text{Number of personnel errors in RTS work performance}}{\text{Number of RTSs completed}}$$

(Note: "RTS" signifies "Repetitive Task Sheet.")

- Evaluate and implement recommendations made by the Trend Task Force documented in report SS 56655.

Corrective Actions:

1. Statistical information has in the past been maintained by several groups whose base data was consistent but categorization of causes was divergent. Consequently, presentation of performance data occasionally conflicted or drove some management analysis in the wrong direction. To address this, North Atlantic will consolidate all human performance related trending under Quality Programs. Equipment and system performance trending will remain the responsibility of the Technical Support Department. This consolidation will ensure that data sources, analysis techniques, and indicators are consistent. Performance indicators will more closely resemble the data points reflecting precursors to performance issues throughout the organization. It is anticipated that the trending consolidation process will be completed by the end of 1994. Notwithstanding this, the Occurrence Review Committee (see 2 below) resolves any interim concerns regarding data/trend consistency for any issues captured by the higher level corrective action documents (e.g., SIRs, OIRs, CDRs).

2. North Atlantic has also implemented an Occurrence Review Committee to review significant conditions adverse to quality identified in corrective action documents to obtain and categorize information including personnel error. This committee reviews Station Information Reports (SIRs),

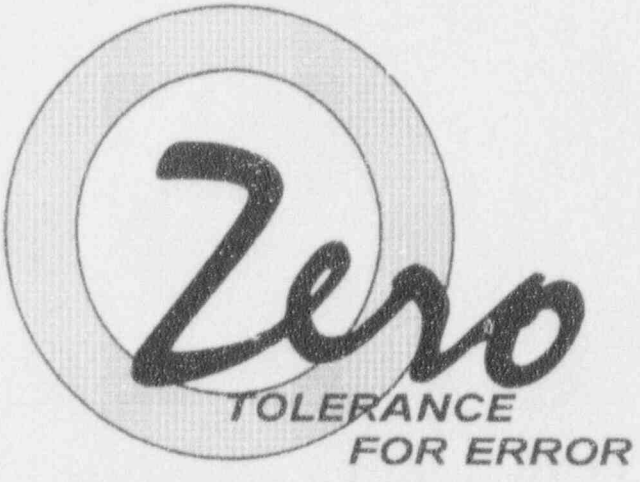
Operational Information Reports (OIRs), and Condition Reports (CDRs) that have been generated recently to obtain a real-time assessment of personnel error or other trends. For each document that indicates personnel error as the preliminary cause, the committee assigns a significance rating of high, moderate, low, or none to the error, and it also looks at repetitive occurrences. The results are entered into a computer data base for use in trend charts. The committee also reviews draft trend reports for validity and accuracy. The committee has the authority to request a special independent review to determine the existence or extent of an adverse trend. The committee briefs management on their findings as required.

QUARTERLY REPORT

FIRST QUARTER

PERSONNEL ERROR RESPONSE TEAM

APRIL 4, 1994



QUARTERLY REPORT

FIRST QUARTER

PERSONNEL ERROR RESPONSE TEAM

APRIL 4, 1994

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QUARTERLY REPORT: FIRST QUARTER OF 1994

PERSONNEL ERROR RESPONSE TEAM

Executive Summary

Purpose of Report

This report provides the first quarterly assessment for the effectiveness of corrective actions implemented in response to recommendation's made in the PERT final report, *Response to Personnel Error*, dated September 24, 1993.

Background

Seabrook Station experienced a repetitive pattern of occurrences involving personnel error during the first months of 1993. Concern centered on the unacceptable frequency of the occurren . the challenge to safety systems. The NRC's resident inspectors noted these occurrences in their reports issued from May 11 to August 28, 1993. In response to the concerns for human performance, the station manager asked the Training Division director to head up a team to identify the underlying issues relating to the high frequency of personnel error. The team, named the "Personnel Error Response Team (PERT)," had a membership limited to six to promote efficiency. It held seven meetings in 1993 during August and September prior to completing a final report, dated September 24, 1993.

The PE members represented various departments, providing a cross disciplinary approach to ensure ad perspective in defining issues. Using both quantitative and qualitative analysis in reviewing occurrences involving personnel error, the PERT identified a total of eight issues in the following three categories: cultural, programmatic, and management oversight. The team's final report contained twenty-two recommendations relative to the eight issues. Prior to implementation, the team modified the statements for the issues and recommendations in accord with reviews by the following groups: 1) a twenty-five member sounding committee, 2) the upper management of the Station organization, and 3) the senior vice president and chief nuclear officer and those who report directly to him.

The issues and recommendations mentioned in the PERT final report are listed on Pages 5 through 23.

Following completion of the PERT final report in September 1993, the senior vice president and chief nuclear officer distributed it to all North Atlantic managers and supervisors with instructions that they transmit the information to their staffs. The cover letter with the report introduced the concept of zero tolerance for error, and requested that North Atlantic's personnel insist on strict accountability for errors by determining root cause, implementing corrective measures, and acquiring the knowledge and skills necessary to prevent repetition of errors.

In the fall of 1993, three external parties, the Independent Assessment Service (IAS) selected by the joint owners, the Institute of Nuclear Power Operations (INPO), and the Nuclear Regulatory Commission (NRC), reviewed occurrences of personnel error at Seabrook Station. These reviews, together with feedback from all segments of the North Atlantic organization, became primary sources of information for the PERT in developing effectiveness measures for actions to achieve improved human performance. The PERT completed an Effectiveness Assessment Plan in January 1994. The plan contains success statements which designate the condition(s) to be achieved by company actions addressing each of the eight human performance issues. The plan also designates activities for PERT members to use in measuring fulfillment of the success statements.

Content of the PERT Quarterly Report

This report describes activities and results associated with implementing the PERT initiatives to reduce personnel error. The report excludes discussion of broader considerations stated in the North Atlantic Plan, which relate performance improvement to the company's vision and mission.

In response to PERT recommendations, North Atlantic management initiated the following actions:

- led the Station organization in establishing a site-wide procedure for a Stop, Think, Act, and Review (STAR) program which promotes self-checking for performance improvement in accord with INPO's guidelines,

- directed development of a revised Supervisory Walkdown Program and associated procedure which are based on INPO's good practice guidance and supported by a course that trains managers/supervisors on program requirements,

- instituted a performance improvement committee which meets biweekly to review and direct efforts for reducing personnel error and for tracking trip reduction and other aspects of performance improvement,

- supported site-wide publicity for self-checking and performance improvement through the publication, *Station Manager's Messenger,* and *Seabrook Week,* the company-wide newspaper.

- assigned the Quality Programs organization authority for controlling company-wide trending, and

- established the broad-based Occurrence Review Committee (ORC), chaired by a Quality Assurance auditor/analyst, with responsibility for promptly determining the preliminary cause for occurrences, assigning a significance rating to each occurrence, and tracking causes through monthly trend graphs.

The director of North Atlantic communications prepares publicity for site-wide distribution to support performance improvement. The publicity includes trend graphs that address a broad range of performance and business issues.

Effectiveness Assessment Activities of PERT

The PERT monitors actions taken under its recommendations and applies its *Effectiveness Assessment Plan* to determine the results achieved. The plan includes actions to:

- measure the evolution of cultural change through worker interviews, studies of trends, and the results of applying the Event Reduction Evaluation Methodology,

- evaluate accountability for performance, ability to institute corrective actions, and other attributes specified in the North Atlantic Plan,

- support implementation of procedures for the Event Reduction Evaluation Methodology, the Stop, Think, Act, and Review (STAR) Program, and the Supervisory Walkdown Program,

- track the impact of the STAR program and the Supervisory Walkdown Program,
- conduct in-depth reviews of SIRs/OIRs using the Event Reduction Evaluation Methodology,
- apply the Event Reduction Evaluation Methodology to at least five occurrences which have taken place after implementation of PERT initiatives. Demonstrate whether the occurrences reflect the impact of the initiatives.
- evaluate adherence to factual reporting based on "tell it like it is,"
- monitor publicity for performance improvement, cultural change, zero tolerance for error, the STAR Program, and the Supervisory Walkdown Program, and
- monitor and evaluate the Occurrence Review Committee and its efforts to control and improve trending of information related to human performance.

Conclusion

The trend bar graph in Attachment 1 shows that the reporting of occurrences in SIRs and OIRs began to increase in August 1993 when implementation of the PERT initiatives began. The increase has continued through the first quarter of 1994. With the increased reporting, the graph also shows that the number of the occurrences related to personnel error increased, as well as the percent of total occurrences related to personnel error. These continual increases since August 1993 are somewhat expected for the following reasons.

- Procedure compliance training and corrective action investigations have generated a greater awareness for personnel error, resulting in increased reporting.
- Performance improvement presentations and the PERT initiatives have produced more sensitivity and perception regarding personnel error. The self-awareness and questioning attitude have identified new problems and old problems that were never challenged.
- Programmatic changes have been introduced which encourage a lower threshold for reporting. For example, the changes have led to a practice characterized by "when in doubt, report."
- This quarter's three-week forced outage to repair the Main Steam Isolation Valves and the associated start-up resulted in a high level of work activity, thereby providing increased challenge to human performance.

North Atlantic has successfully communicated the message that improving our regulatory and plant performance are paramount to the company's viability and long-term success. The PERT has seen substantial evidence of a culture change toward increased accountability and ownership for occurrences involving personnel error. The reporting of these occurrences has become more candid and root cause analysis has improved.

The company has been managing this change in culture through a continuous stream of communications. The communications have had a balanced mix of face-to-face presentations, one-on-one management discussions, printed articles, and fliers. The message has been reinforced through visual media, such as posters and the use of symbolic logos.

North Atlantic has committed to the structure necessary to support the new culture and will strive to continually strengthen that support. Improvements have been introduced to the STAR and Supervisory Walkdown programs by incorporating the industry's best practices. The PERT has been involved with the revisions and review associated with the improvements in these programs. Because the improved programs have only recently been issued for review and approval, a current evaluation of their effectiveness in reducing personnel error would be premature.

Improvement in management oversight is another vital support for the emerging culture. The newly established Occurrence Review Committee and its associated trending activities provide early warning of declining performance. The Commitment Management Program and new elements for the Seabrook Station Operating Experience Program Manual support more effective assignment of categories for corrective action activities and better tracking to follow the completion of those activities. Improvements made in management self-assessment and root cause analysis will provide increased ability to accurately identify the problems that need attention.

The PERT has designated actions for assessing the effectiveness of measures introduced to reduce personnel error. This report describes the actions and indicates those that have been completed, or are in progress, and those that will be implemented in the future. The effort to reduce personnel error will expand in the future with the implementation of activities which are now under approval review. The introduction of these additional activities will increase the need for ongoing effectiveness monitoring. The PERT intends to meet this need. Along with monitoring, the PERT will continually evaluate its recommendations/actions and modify them as circumstances may require.

QUARTERLY REPORT: FIRST QUARTER OF 1994

PERSONNEL ERROR RESPONSE TEAM

Introduction

A repetitive pattern of occurrences involving personnel error developed at Seabrook Station during the first eight months of 1993. Concern for human performance centered on the unacceptable frequency of the occurrences and the challenge to safety systems. In response to the concern, which had been expressed by company personnel and the NRC's resident inspector, the station manager asked the Training Division director to head up a team to identify the underlying issues relating to the high frequency of personnel error. The team, named the "Personnel Error Response Team," had a membership limited to six to promote efficiency in actions. The members of the team are listed below.

- Director of the Training Division - Peter Richardson (chairperson)
- Technical Projects Supervisor - Edward Sovetsky
- General Training Manager - Roy Hickok
- Project Engineer - Robert Martel
- Lead Engineer (Operating Experience) - Robert Gwinn
- Operations Training Supervisor - Laurits Carlsen

During August and September 1993, the Personnel Error Response Team (PERT) held seven meetings in which it identified eight issues having an impact on personnel error. On September 24, 1993, it issued a final report with recommendations for corrective actions addressing each of the eight issues.

After issuance of the PERT final report, the company began implementing the report's recommendations. The PERT interrupted its meeting schedule for two months while actions to implement the recommendations were taking effect. In December 1993, the PERT initiated meetings to develop effectiveness assessment measures for determining the success of actions taken to resolve the issues identified by the PERT. The PERT began by developing a "success statement" for each of the eight issues. Then, it developed for each issue a series of ongoing activities designed to measure degree of success in achieving the condition(s) specified by the success statement. In January 1994, after five meetings, the PERT prepared and distributed a report, titled "*PERT Effectiveness Assessment Plan*, which included the success statements and the activities for measuring success.

Following issuance of the *Effectiveness Assessment Plan*, the PERT engaged in actions to measure a successful resolution of the issues identified by the PERT. Pages 5 through 23 of the quarterly report describe the actions completed and actions pending as of April 1, 1994. The actions for measuring success were developed and their results reviewed by the PERT in eleven meetings held in the first quarter after completion of the *Effectiveness Assessment Plan*. The PERT will continue to meet in the second quarter to follow up on the actions listed in this report. It will conduct ongoing evaluation of human performance and modify its recommendations and/or actions as circumstances may require.

Items for Consideration

As the result of discussion at meetings in the first quarter, the PERT suggests the following items for consideration by appropriate organizations within the company.

1. Participation of Wage/Hourly Personnel in Decision-Making -

   North Atlantic management should look for opportunities to further involve wage and hour employees in initiatives and activities which support performance improvements. The company needs to demonstrate a sincere commitment to seek out and value input and involvement by all employees.

2. Goal for Personnel Error -

   North Atlantic's executive management should consider the development of company goals for reduction in the number of personnel errors. For example, a goal might be expressed in the following way:

   > "In 1995, North Atlantic will reduce both the number of significant personnel errors and the number of all personnel errors by 50% or more compared to 1994."

   Each department should develop and publicize limits for the actual numbers of personnel errors by its staff members which are necessary to achieve the overall company goals.

3. Management Involvement -

   The appropriate level of senior management is not always involved in the review of SIRs that identify programmatic weaknesses, whose corrective actions may require a significant commitment of resources. Examples of these types of corrective actions include painting and plant labeling. The present review process may end at the manager/supervisor level. Consideration should be given to requiring review by the level of management that has the authority to commit the resources to adequately implement the corrective actions.

4. Management Visibility -

   North Atlantic's executive management team should strive for greater visibility in in-plant activities. This would ensure sustained reinforcement of both existing and new PERT initiatives.

5. Accountability for Human Performance Enhancement System (HPES) Reports -

   As indicated on Page 8 by Item No. 2 of "Actions Completed/In Progress", in the first quarter, the station manager assigned thirty-two HPES evaluations for a total of eighty-nine SIR/OIR occurrences. This number of HPES evaluations suggests that the evaluations are being assigned when necessary. However, the timeliness of reports

describing the HPES evaluations is inadequate, with reports completed for only four of the thirty-two assigned evaluations. The opinion of the PERT is that the HPES evaluation reports would receive more urgent attention if they were actually assigned personally by the station manager. Accountability for the HPES reports should be driven by the station manager, rather than by the HPES coordinator.

6. Preparation of Occurrence Reports to Outside Agencies -

Occurrence reports to outside agencies require information, including causal information, that should be available in a Station Information Report (SIR). The SIR review is frequently not completed within the time required for submittal of the occurrence report, and thus the author of the occurrence report must perform much of the work that goes into the preparation of the SIR. In the interest of producing high quality occurrence reports and the related SIRs efficiently, the department that prepares the occurrence report should also prepare the SIR.

The quality of occurrence reports could be further improved by ensuring that these reports are accompanied by a formal root cause analysis. At present, root cause analyses are performed primarily for occurrences involving a reactor trip or safety injection. The root cause analyses should be performed by a group which is independent from the one preparing the report.

7. SIR Preparation -

The review of SIR evaluations by a PERT member (Attachment 2, Item No. 1.1.8) suggests that the evaluations should be upgraded to consistently include the reasoning and thought process that leads to the determination of apparent cause or root cause. Causal codes, designated in accord with the classification scheme in SSOE 4.3, Root Cause Analysis, and supporting discussion should be included in all SIR evaluations, whether or not cause is determined by root cause analysis.

8. Training on SIR Preparation -

Although SIR quality has increased over the past six months and "tell it like it is" philosophy is taking hold, the preparation of SIRs requires significant improvement. Evaluations of six SIRs by a member of PERT (Attachment 2) revealed failure to identify the full details surrounding an event and failure to comply with SIR format requirements. To achieve needed improvement, the authors of SIRs should receive training on:

- the expectations of the SIR/OIR process,
- the revised Seabrook Station Operating Experience Program Manual (SSOE) with emphasis on the sections relating to SIR/OIR evaluations,
- root cause analysis as in SSOE 4.3, and
- the codes used to categorize the causes for occurrences.

9. Definition for Personnel Error -

The PERT suggests that all organizations within the company adopt a definition for personnel error based on the term, "inappropriate action," defined in the Human Performance Enhancement System (HPES) Coordinator's Manual published by the Institute of Nuclear Power Operations (INPO). Using that basis, the definition for personnel error is:

> **human behavior, either observable or nonobservable, that transforms normal performance into an abnormal situation.**

In conjunction with this definition, the following categories of personnel error should be recognized. They correspond to those the HPES Coordinator's Manual lists for "inappropriate action."

Categories of Personnel Error:

1.	Omission	-	the failure to perform an action
2.	Extraneous Act	-	an action not required by procedure or training
3.	Untimely Act	-	an action performed, but not at or within the proper time
4.	Transposition	-	the performance of a correct action on an incorrect unit system, train, or component
5.	Out of Sequence	-	the performance of correct actions in the wrong order
6.	Quantitative Deficiency	-	application of too much, or too little, of an intended action

Category: Cultural Issue

Issue 1C: Personnel errors are tolerated and rationalized as being acceptable. They are shielded from scrutiny by overemphasis on confidentiality, with resultant lack of accountability.

Recommendations:

- Management's expectations should be verbally communicated frequently and visibly.
- Establish accountability and promote open communication.
  - Personnel involved in an incident related to human error should prepare a presentation on the incident to be delivered at a department meeting or during a session of requalification or continuing training.
  - Develop a basic outline, or agenda, for the presentation which is based on answering Who?, What?, Where?, When?, and providing action recommendations designed to prevent recurrence.
  - The manager, department head, or supervisor responsible for personnel involved in an incident related to human error should deliver a presentation on the incident to the station manager's daily meeting or the weekly Group Managers' meeting.
  - Interdepartmental communication on operating experiences should be improved by implementing the following action.
- Make operating experience, including specific incidents in the industry or at Seabrook, a topic for presentation and discussion at each weekly Group Manager's meeting. The first presentation should include a general discussion on preparing and interpreting trend charts, with following presentations using trend charts to support interpretations of current operating experience. Publish the content of the presentations in the *Station Manager's Messenger.*

Success Statement:

Establish a company culture that accepts accountability for personnel error.

Actions completed/In Progress:

1. The PERT continues to collect and evaluate trend information developed for personnel error. The weekly meetings of the PERT have had briefings by individuals responsible for trending in either the Quality Programs or Technical Projects organizations.

2. The PERT has found that management's expectations regarding accountability have been formally communicated to employees by the following presentations conducted in two different organizational settings.

- Separate presentations at various locations by the senior vice president and chief nuclear officer and the station manager identifying our performance problem as evidenced by decline in regulatory and station performance.

- Follow-up meetings within divisions, groups, and departments to listen to the employees' reaction to the performance problem, and to assess and improve understanding for the issues involved and response measures needed.

3. Feedback generated during the following meetings has provided opportunities for the PERT to determine attitudes and reactions regarding personnel error, accountability, and PERT initiatives.

   - meetings of employees for presentations on performance improvement

   - biweekly performance improvement status meetings

   - occurrence response team meetings

   - forced outage status meetings

   Feedback received during the following training sessions has also contributed to understanding employees' attitudes relative to personnel error.

   - Configuration Management training

   - Construction Services training on preparations for the refueling outage

   - Follow-up sessions in the training course, *Teamwork in Developing Excellence* (TIDE)

4. The PERT has observed efforts by the station manager to encourage comprehensive, factual reporting as a basis for developing corrective actions for plant occurrences. The PERT has found that these efforts support open communication and accountability. The station manager also supports open communication through information he contributes to a site publication, the *Station Manager's Messenger.* During this quarter, he has enhanced the publication by including more information relating to performance improvement. Descriptions of occurrences are now included in a new column titled, "Operating Experience - Lessons Learned," which began January 17. For each issue since that date, the column has included descriptions of two or more occurrences.

   In another effort to support open communications, the operations manager had a video tape developed which recreated the circumstances related to an occurrence which caused an inadvertent containment isolation of the steam generator blowdown system. The video featured the individuals actually involved in the incident, and included a complete description of the conditions leading to the occurrence and the valuable lessons learned. The video was shown by the Operations Department to all of the operating crews. It was also shown at one of the station manager's daily meetings.

   An example illustrating effective, open communications was provided by the maintenance manager in a recent lessons learned presentation, which members of the PERT attended. The presentation, which was made at one of the station manager's daily meetings,

provided a candid account of an incident where workers erected staging in the wrong electrical room to conduct an inspection of a fire damper associated with a Service Water Cooling Tower. The maintenance manager developed his presentation after personally visiting the work-site to discuss the occurrence with the workers.

5. The PERT has evaluated site publications for their impact in promoting cultural change. These publications included the *Station Manager's Messenger, Seabrook Week*, and *Operating Experience Newsletter*, all of which emphasize topics relating to performance improvement and PERT initiatives. Each week since January 21 Seabrook Week has had articles on self-checking and the Stop, Think, Act, and Review (STAR) program. The *Station Manager's Messenger* has stressed zero tolerance for error as a theme and, as mentioned previously, contains at least two articles per issue describing occurrences. *Operating Experience Newsletter* is a new publication whose first issue appeared on March 24, 1994. The station manager introduced the *Newsletter* to communicate experiences where lessons are learned and knowledge is gained.

6. The PERT has verified that North Atlantic's management has evaluated various consulting firms to select one that can work together with North Atlantic to develop and administer a climate survey. The climate revealed by the survey will reflect the underlying culture. Thus, the survey will essentially assess the extent to which our employees have adopted a culture based on core values the company advocates through *Values for Excellence*.

Actions Pending:

1. The PERT will verify that North Atlantic conducts a climate survey and analyzes the results. The company will institute actions based on the survey's results to address deviations between desired versus actual commitment to *Values for Excellence*. The primary function of the survey is to:

   - provide information on prevailing cultural values.

   The survey will also fulfill the following two functions.

   - Communication - The input the survey requests from employees will communicate to them the importance the company places on the values it espouses.

   - Organization Development - The deviations the survey may show between desired and actual commitment to *Values for Excellence* must be addressed through actions to be rolled into the North Atlantic strategic plan.

2. The PERT will monitor that North Atlantic uses the *Station Manager's Messenger* or other site publications to distribute reports of operating experience presentations delivered at weekly group manager's meetings.

3. The PERT will verify that briefings are conducted to inform contract workers participating in the third refueling outage about the following issues relating to the company's culture and human error: 1) accountability, 2) personnel error, 3) zero tolerance for error, 4) procedure compliance, and 5) work practices.

Category: Cultural Issue

Issue 2C: Absence of management's attention and priority for incidents leads to lack of ownership and responsiveness to activities, with inability to effectively institute corrective actions.

Recommendations:

- Proceduralize a post event evaluation in accord with Methodology-Event Reduction Evaluation.
- Develop and implement a process to assess the effectiveness of corrective actions taken in response to post event recommendations.
- Management's expectation message needs to include content, priority, ownership, and responsiveness to incidents, particularly those involving personnel error.
- Evaluate the effectiveness of the Maintenance Improvement Plan (MIP) as related to the reduction of personnel error.
- The station manager needs to more frequently require a Human Performance Enhancement System (HPES) evaluation of incidents.

Success Statement:

Implement a management self-assessment process to monitor and improve performance.

Actions Completed/In Progress:

1. Members of the PERT attend biweekly performance improvement meetings on an ongoing basis. The meetings, which are led by the director of emergency preparedness and site services, address the status of actions instituted to support the PERT initiatives.

2. The PERT monitors the use of the Human Performance Enhancement System (HPES). In the first quarter, the station manager assigned HPES evaluations for thirty-two occurrences reported in SIRs/OIRs out of a total of eighty-nine SIRs/OIRs. The HPES Coordinator has completed four of the thirty-two evaluations, with twelve in progress, and sixteen remaining to be started.

3. Members of the PERT observed some sessions of the following meetings held for presentations and discussions of performance improvement and cultural change.

    - Meetings conducted around the site in November/December 1993 by the vice president and chief nuclear officer and the station manager to present talks describing performance problems and their repercussions for the company's business position and its relations with regulators.

    - Division and department staff meetings throughout the first quarter to address performance issues, with opportunity afforded for feedback from the staff members. Several departments gave the PERT chairperson written summaries which identified issues staff members raised at the meetings.

Actions Pending:

1. The revised Operating Experience Program Manual (SSOE), which is currently under review, incorporates the Event Reduction Evaluation Methodology as a procedure. The methodology specifies a formal process for analyzing occurrences which includes root cause analysis. The revised SSOE will enter the final stage of review early in April 1994 when it will be considered by the Station Operation Review Committee (SORC). The PERT will verify the approval of the revised SSOE and evaluate its effectiveness.

2. The PERT plans to evaluate the effectiveness of the Commitment Management Program (CMP) which tracks the scheduling and completion of corrective actions. This evaluation is pending the implementation of the Commitment Management Program and the issuance of a CMP procedure that is currently under review.

3. The PERT will evaluate the outcome of an independent review of North Atlantic's corrective actions program which the director of site services will conduct in response to a request by the executive director of nuclear production. The PERT will use the evaluation results to modify its recommendations and the *Effectiveness Assessment Plan*.

4. Currently, a process is being developed for management review of the effectiveness of corrective actions. This process is known as "management self-assessment," which is described under Issue 1M on Page 19. Within the Maintenance Group, management self-assessment is included in the Maintenance Improvement Plan. When the process has been implemented, the PERT will conduct an ongoing evaluation of its effectiveness in all departments and groups.

5. Following the refueling outage, in small-group meetings conducted at various points around the site, the vice president and chief nuclear officer and the station manager will conduct discussions with employees to explore the relationship between performance and the company's vision and mission. The PERT will verify the completion of these discussions.

Category: Cultural Issue

Issue 3C: Senior management is sometimes insulated from the exact details of an event due to incomplete documentation of event information.

Recommendations:

- Include nonconfidential portions of the HPES report in Operational Information Reports (OIRs) and/or Station Information Reports (SIRs).

- Include Stop, Think, Act, and Review (STAR) Worksheets in reports.

  (Note: References to people identified by name could be removed from HPES and STAR information that is included in other reports.)

- Managements's expectation message should address the issue of open and candid communication. Management should adopt a "Tell it like it is" policy.

- Revise the Operating Experience Program Manual (SSOE) to require Cause and Failure Analysis for events.

Success Statement:

Adopt a "tell it like it is" policy to insist on factual reporting of occurrences.

Actions Completed/In Progress:

1. The PERT has verified that the number of STAR work sheets included in reports is increasing. During the first quarter, thirty-five STAR work sheets were submitted, which represents an increase of twenty-five over the ten work sheets submitted in the first quarter of 1993.

2. A member of the PERT reviewed twenty SIRs and twenty-eight OIRs. These reports included most occurrences reported for the period from the summer of 1993 to the present time. The reviews evaluated factual reporting and evidence for both management and worker accountability. Except for three OIRs, these reports were written in a "tell it like it is" style. For the three exceptions, information in the OIRs had to be supplemented by information from other sources to obtain a complete understanding of the occurrences.

   Recent experience indicates that a greater number of SIRs and OIRs are being written and that their quality is improving.

3. The PERT has found increasing evidence for use of "tell it like it is" as part of the cultural change in response to the PERT initiatives. Long-standing, resource intensive problems, which were previously unchallenged and assumed to be insurmountable, are now being evaluated and corrective actions developed and implemented. For example, problems relating to maintenance, inspections, and operator qualifications for lifting systems, e.g. cranes, were not challenged because of their magnitude and resource requirements. During the first quarter, senior management was informed of the problems and formed a task force to address them. The task force completed a report on March 1, 1994 which presented recommendations based on the first phase of its activities.

Actions Pending:

1. Revise the Operating Experience Program Manual (SSOE) by inserting a requirement that HPES reports be included in OIRs and SIRs. This requirement is contained in the revised SSOE which will enter the final stage of the review process early in April 1994, as mentioned in item No. 1 of "Actions Pending" for Issue 2C. The PERT will verify that the revised SSOE contains the requirement.

2. The PERT will monitor the approved, revised SSOE to verify that it includes a requirement that Cause and Failure Analysis be performed for all SIRs and OIRs. The revised SSOE referenced in the preceding item includes this requirement.

3. The PERT will continue to review SIRs and OIRs on an ongoing basis to determine compliance with a "tell it like it is" style. Most of the SIRs and OIRs reviewed to the date of this report have not had accompanying HPES reports. In the future, when the current backlog of uncompleted HPES reports is eliminated, the SIRs and OIRs reviewed will be accompanied by the related HPES reports, facilitating a more reliable conclusion regarding adherence to "tell it like it is."

Category: Programmatic Issue

Issue 1P: The Stop, Think, Act, and Review (STAR) Program is ineffective.

Recommendations:

- Develop and implement a site-wide (not limited to just the Station) program on self-verification to achieve the following objectives:

  - improvement in awareness,
  - direct linkage with OIRs and SIRs,
  - timely development of STAR worksheets, and
  - worksheet distribution identified.

Success Statement:

Institutionalize self-checking as a site-wide work practice to reduce personnel error.

Actions Completed/In Progress:

1. The PERT participated in the revision of North Atlantic's policy, Stop, Think, Act, and Review (STAR). The revised policy has been approved and implemented.

2. The efforts of the PERT ensured that views representing a cross section from all of North Atlantic's groups and departments were considered in revising the STAR program. A member of the PERT supported the HPES Coordinator in interviewing personnel with regard to their views on the STAR program.

3. The PERT verified that adequate publicity has been given to the revised STAR program. Articles mentioning the STAR program and the importance of self-checking have appeared in nine 1994 issues of the site weekly publication, *Seabrook Week*. The 1994 issues of the site publication, *Station Manager's Messenger*, have featured articles on self-checking, the STAR Program, and zero tolerance for error. The March 4, issue of *Seabrook Week* included direct comments by the HPES Coordinator stressing important features of the new procedure for the STAR program.

4. The PERT reviewed the Trip Reduction Program to confirm that it included self-checking.

5. The PERT monitored the quality of responses recorded on STAR work sheets. The quality of the responses on STAR worksheets has improved during the past several months.

6. The PERT reviewed a video tape on lessons learned from an occurrence involving personnel error. The tape, which the Operations Department developed, was distributed for viewing by all shift workers. The production and distribution of the video provided a well planned opportunity for supporting self-checking and the reduction of personnel error.

7. Members of the PERT observed the Senior Management meeting in which the senior vice president and chief nuclear officer formally introduced the North Atlantic Plan which encompasses critical success factors to achieve the company's mission and fulfill its

vision. The Plan includes the PERT initiatives as a strategy supporting a critical success factor for safe and reliable operation of the plant. The STAR program was rolled out at this meeting in a presentation delivered by the operations manager.

8. In monitoring publicity for the STAR program, the PERT confirmed that the HPES coordinator and the operations manager gave presentations on the revised STAR program at two department meetings in the Quality Programs Division and at meetings held in Office Services and Emergency Planning.

Actions Pending

1. The PERT will continually monitor the effectiveness of the publicity campaign directed by the company's Communications Division to reinforce the STAR program.

2. The PERT will continue to evaluate the effectiveness of the STAR program, including review of the number and quality of STAR work sheets submitted, and assessing program impact through interviews with wage/hourly personnel and managers/supervisors.

Category: Programmatic Issue

Issue 2P: The Supervisory Walk-Down Program is ineffective.

Recommendations:

- Revise the Supervisory Walk-Down Program to include needed structure and appropriate portions of the Northeast Utilities program.

  - Define program objectives that encompass more than housekeeping and safety. For example, define objectives for:

    procedure adequacy,
    procedure compliance,
    job performance,
    personnel and equipment concerns, and
    programmatic issues.

Success Statement:

Implement a Supervisory Walk-Down Program which will ensure management's involvement in day-to-day work activities leading to improved performance with less personnel error.

Actions Completed/in Progress:

1. The PERT confirmed the following information about the Supervisory Walkdown Program. The manager of maintenance support and coordination has developed a draft procedure (SM 7.3) for a revised Supervisory Walkdown Program. The draft procedure is based on INPO Good Practice documents and on programs at the following plants: Fitzpatrick, Calvert Cliffs, Hope Creek, Prairie Island, Grand Gulf, and Millstone. All of these plants have been recognized by INPO for having good supervisory walkdown programs.

   The draft procedure has had three reviews, including management review, and it is presently in the final review process, which is conducted by the Station Operation Review Committee (SORC).

2. The PERT verified that training had been prepared to support the Supervisory Walkdown Program. The training consists of a course developed by the Training Division which informs managers and supervisors about procedural requirements and management's expectations for supervisory walkdown.

   The PERT also verified that an INPO observation training video/film is being reviewed for possible use prior to walkdowns.

3. The PERT confirmed that implementation of the Supervisory Walkdown Program will begin with a pilot program during the third refueling outage, followed by full implementation after the outage.

Actions Pending

1. The PERT will monitor actions to institute the Supervisory Walkdown Program.

2. Following implementation of the Supervisory Walkdown Program, the PERT will confirm that walkdowns are performed and reports developed according to schedule as required by the program.

3. The PERT will evaluate the quality of supervisory walkdown reports and conduct ongoing assessment of the program.

Category: Programmatic Issue

Issue 3P: Overly complex processes, programs, and procedures

Recommendations:

- The work control program should be improved through communication and feedback among the key applicable organizations. The Work Control Interface Committee (WCIC) should be the focal point for this effort and use specific examples of problems, or enhancement ideas, to improve work package quality by designating appropriate level of instruction, documentation, program guidance, format, and package size.

- Implement Procedures Task Force recommendations.

- Complete implementation of the recommendations of Configuration Control Task Force II.

- Evaluate results of Northeast Utilities' Performance Enhancement Program (PEP) as they relate to Work Control.

Success Statement:

Incorporate changes in the work control process which reduce the potential for personnel error.

Actions Completed/In Progress:

1. The PERT verified that *Event Reduction Evaluation Methodology*, including root cause analysis, has been incorporated into the revised Station Operating Experience Manual (SSOE) as Section OE 4.6. As stated for Issue 3C, the revised SSOE entered the final review process at the beginning of April 1994.

2. A member of the PERT has applied the Event Reduction Evaluation Methodology to six SIRs written after the introduction of the PERT initiatives to determine their impact. A matrix showing characteristics of SIR content and preparation for the six SIRS appears in Attachment 2. Conclusions and findings resulting from the evaluations based on the methodology are included in items three through seven of "Items for Consideration," which begins on Page 2.

3. A member of the PERT has followed the activities of the Work Control Interface Committee (WCIC) and a subcommittee. The subcommittee conducted a survey of worker attitude regarding the work control process. In the survey, workers completed a questionnaire and had interviews with a subcommittee member.

4. A PERT member has attended meetings of the following groups to obtain information on their activities and decisions relating to the reduction of personnel error.

    - WCIC and subcommittee
    - Steering Committee for Manuals, Programs, and Procedures
    - Procedures Task Force

The following paragraphs indicate actions completed or in progress by each of the preceding groups.

Work Control Interface Committee (WCIC):

a. A WCIC subcommittee reviewed 130 work packages and identified several weaknesses, which were reported in the minutes of the WCIC meeting of January 4, 1994.

b. The WCIC meeting of March 1, 1994 reviewed a list of problems on the work control process that were revealed by a survey and worker interviews conducted by the WCIC subcommittee. The subcommittee developed recommendations to improve the work control process through actions resolving the identified problems.

Steering Committee for Manuals, Programs, and Procedures:

a. The committee has held several meetings and is addressing issues relating to the improvement of manuals, program descriptions, and procedures.

Procedures Task Force:

a. Preparations are in progress for a four-year project to revise all of the existing plant procedures to make them easier to use. Procedure writers are scheduled to begin work in July 1994. The objective for revision is to simplify procedures by shortening the wording, eliminating multiple actions in one step, and writing to the level of the least qualified individual involved in performing the procedure. The revision of the procedures will enhance procedure compliance and reduce personnel error.

   The Procedures Task Force has evaluated the procedures improvement project conducted under Northeast Utilities' Performance Enhancement Program (PEP). North Atlantic will adopt practices from the PEP which support the company's needs for upgrading procedures, including a modified version of the procedure writer's guide developed for PEP.

   Procedures are being assigned priority for revision according to a rating based on integrated consideration of safety impact, severity of complaints, the procedure's role in the Trip Reduction Program, frequency of use, and importance.

Actions Pending:

1. The following paragraphs indicate actions pending for each of the groups listed under Item No. 4 of "Actions Completed/In Progress."

Work Control Interface Committee (WCIC):

a. The following changes to enhance the efficiency of the work control process will be implemented prior to the third refueling outage.

   - Designated members of the Maintenance Group will be given authority to make scope changes in plant work.

   - Revision of Repetitive Task Sheets will be simplified by a reduction in the number of signatures required for approval of a revision.

   - The Temporary Equipment and Scaffolding Procedures will be revised to increase control and documentation of equipment.

   Additional improvements in the work control process will be implemented following the third refueling outage.

b. A PERT member will interview workers to determine their attitudes on the need for change in the work control process. The interviewing will begin during the third refueling outage which starts in April 1994. The PERT member conducting the interviews will be working in the Technical Support Department as a systems engineer responsible for vessel disassembly and for back shift work control coordination with maintenance personnel.

c. Beginning with the refueling outage in April 1994, the PERT will evaluate work packages on an ongoing basis to determine the extent they incorporate INPO good practices and changes in response to worker attitudes.

d. When changes have been made in the work control process, a PERT member will interview workers to determine their attitudes regarding the changes. The PERT member will then evaluate the effectiveness of the work control changes based on the interview comments and on a general assessment of the process.

e. Following implementation of changes in the work control process, the PERT will conduct ongoing review of *Station Information and Operating Experience Reports* (SIRs and OIRs) to determine if "work control" is being listed less frequently as a cause for personnel error.

f. After the WCIC has completed its recommendations, the PERT will determine the extent to which they include "lessons learned" on work control from the Performance Enhancement Program (PEP) implemented by Northeast Utilities.

Steering Committee for Manuals, Programs, and Procedures:

a. When manuals, program descriptions, and procedures are changed in accord with the committee's recommendations, the PERT will conduct interviews with users of the materials to determine the effectiveness of the changes.

Procedures Task Force

a. The PERT will continually review efforts to implement recommendations made by the Procedures Task Force.

Category: Management Oversight Issue

Issue 1M: Lack of follow-up on Corrective Actions (Cas)

Recommendations:

- Develop a system of priority for responding to events and for reviewing the effect of corrective actions. The highest level of priority should be designated for safety related events. The lowest level of priority should be designated for housekeeping-related problems.

- Develop and implement a review process for OIRs and SIRs which requires that the responsible manager assigned to an OIR or SIR must prepare to meet with the station manager to discuss the resolution of the issues involved, if requested.

- PERT must ensure that the actions implemented by the station manager in response to the PERT recommendations are effective. Three to four months after a majority of the actions have been implemented, PERT will:

  - evaluate the effectiveness of each action,
  - evaluate the effectiveness for the combined impact of all the actions, and
  - make suggestions to the station manager for any changes needed to improve the actions.

Success Statement:

Establish a company-wide system for prioritization of corrective actions. Ensure group managers' accountability for corrective actions through follow-up sessions with the station manager. PERT completes an Effectiveness Assessment Plan followed by an independent blue ribbon committee's assessment of PERT.

Actions Completed/In Progress:

1. The PERT prepared an *Effectiveness Assessment Plan* which defines activities required to fulfill a success statement for each of eight issues relating to reduction of personnel error.

2. Initial presentations of the *Effectiveness Assessment Plan were made by the PERT chairperson to* a senior management meeting and to a bi-weekly performance improvement status meeting.

3. The members of the PERT have attended various meetings to provide periodic briefings on PERT initiatives.

4. The PERT evaluated the process developed for prioritization of corrective actions. The process establishes priority through the integrated action of the four tools described by the following paragraphs, "a" through "d."

   a. Occurrence Review Committee (ORC) -

      The Occurrence Review Committee (ORC) has broad-based membership, including the HPES coordinator, and representatives from Technical Projects, Operations, the

Training Division, Quality Programs, the Maintenance Group, Engineering, and the Independent Safety Engineering Group. ORC's purpose under its charter is to review corrective action documents, i.e. SIRs, OIRs, and CDRs, and determine significance utilizing a significance factor work sheet, area of concern category, and preliminary cause. ORC's purpose also includes reviewing draft trend reports for validity and accuracy, with authority to request independent reviews to determine the existence or extent of an adverse trend. ORC's goal is to foster a self-critical, questioning attitude in reviewing corrective action documents to aid the early resolution of causes prior to the development of an adverse trend.

b. Management Self-Assessment -

The company is currently engaged in an effort to institute a process for ongoing management self-assessment to determine ways for enhancing operational effectiveness. The process includes comprehensive identification of all aspects needing improvement combined with effective prioritization of corrective actions. Self-assessment fosters continuous improvement in products, services, and performance by individuals and their organizations. Through self-assessment, opportunities are identified for improving the quality and economy of work processes and products. The self-assessment process is based on the philosophy that individuals and organizations continually:

- examine their operational effectiveness,
- identify strengths (noteworthy practices) and weaknesses (areas for improvement),
- determine root causes for identified weaknesses,
- develop, implement, and evaluate effectiveness of corrective actions,
- develop lessons learned, and
- implement practices to minimize weakness and maximize strengths in an effort to achieve standards of excellence.

The need for management self-assessment resulted from an audit by external parties last August, which is known as the Joint Utility Management Audit (JUMA). The audit suggested that North Atlantic's approach to quality shift from a focus on compliance to an emphasis on continuous improvement and preventive measures. The Quality Programs organization is currently drafting a corporate-level procedure on self-assessment which defines the concept, management expectations for practicing self-assessment, and recommended approaches to self-assessment.

c. Root Cause Analysis -

The personnel who analyze occurrences have received training during the first quarter to enhance their skills in root cause analysis. Consequently, more determinations of cause are based on root cause analysis, which enhances the effectiveness of prioritization by ensuring consideration of valid causes in assigning priority.

d. The Commitment Management Program (CMP) together with elements of the Operating Experience Program Manual (SSOE) -

The Commitment Management Program tracks the scheduling and completion of corrective actions. It includes enhancements developed from several years of experience in operating a previous tracking system.

Actions Pending:

1. The chairperson of the PERT will present a synopsis of the quarterly report to a meeting of senior management.

2. The PERT will ensure that the effectiveness of its initiatives are evaluated by an independent, blue ribbon review team that will include members with particular expertise in human performance and organizational development.

Category: Management Oversight Issue

Issue 2M: Too many conflicting trend reports

Recommendations:

- Develop specific performance measurement indicators having a statistically significant correlation to work activity, e.g. the number of personnel errors per RTS completed as computed by the following ratio.

$$\frac{\text{Number of personnel errors in RTS work performance}}{\text{Number of RTSs completed}}$$

(Note: "RTS" signifies "Repetitive Task Sheet."

- Evaluate and implement recommendations made by the Trend Task Force documented in report SS 56656

Success Statement:

Witness the assignment of responsibility for trending to one group which will consolidate trending activities. The trending function will develop and trend performance measures that management uses to initiate actions to improve performance.

Actions Completed/In Progress:

1. In response to the Success Statement the PERT developed for this issue, the station manager directed that the nuclear safety and assessment manager, who is a member of the Quality Programs organization, take responsibility for monitoring all trend graphs developed within the company.

2. The PERT verified the following information relating to the ORC. The nuclear safety and assessment manager established the ORC to review corrective action documents (SIRs, OIRs, and CDRs), determine preliminary cause for occurrences reported in the documents, assign a significance rating to each occurrence, and track the causes through trend graphs. The ORC, which operates under a charter drafted in December 1993, is committed to reviewing all SIRs, OIRs, and CDRs issued in 1994.

3. The PERT confirmed that, in mid-February, the ORC began its review of corrective action documents, and that on March 2 the ORC published results for the total of twenty-eight corrective action documents issued in January 1994 (Attachment 3). The first page of the three-page attachment with Attachment 3 shows the significance factor the ORC determined for each of the twenty-eight corrective action documents. The second page of the attachment shows the eight categories of cause found among the preliminary causes for the twenty-eight occurrences. It also shows the significance factors for the occurrences in each category. The third page of the attachment shows areas of concern associated with the occurrences.

4. In following the activities of the ORC, the PERT learned that, on March 16, the ORC chairperson met with the station manager to present a draft report showing various ways of portraying weekly, monthly, or quarterly trends and describing possible content for an annual report.

5. The PERT confirmed that, on February 18, a broad-based group of North Atlantic's employees met to discuss ways of presenting trends in site-wide publications, such as *Seabrook Week* or the *Station Manager's Messenger*, to inform employees of progress in meeting company goals.

6. The PERT verified that the Quality Assurance auditor/analyst, who is chairperson of ORC, has developed a draft North Atlantic procedure giving guidance for the use and development of trends. A target date for completion of the procedure is May 31.

Actions Pending:

1. The PERT will evaluate whether ORC trending based on preliminary cause is an effective management tool for making corrective action decisions.

2. The PERT will follow the development of a site-wide policy and procedure which specify the production and use of trend charts within the company.

3. The PERT will evaluate the methods used to communicate/publicize information on personnel errors.

4. The PERT will follow the development of a procedure which defines the operation of the ORC.

ATTACHMENTS

The pages that follow contain the attachments listed below.

Attachment One - Occurrence Trend Chart for the First Quarter 1994

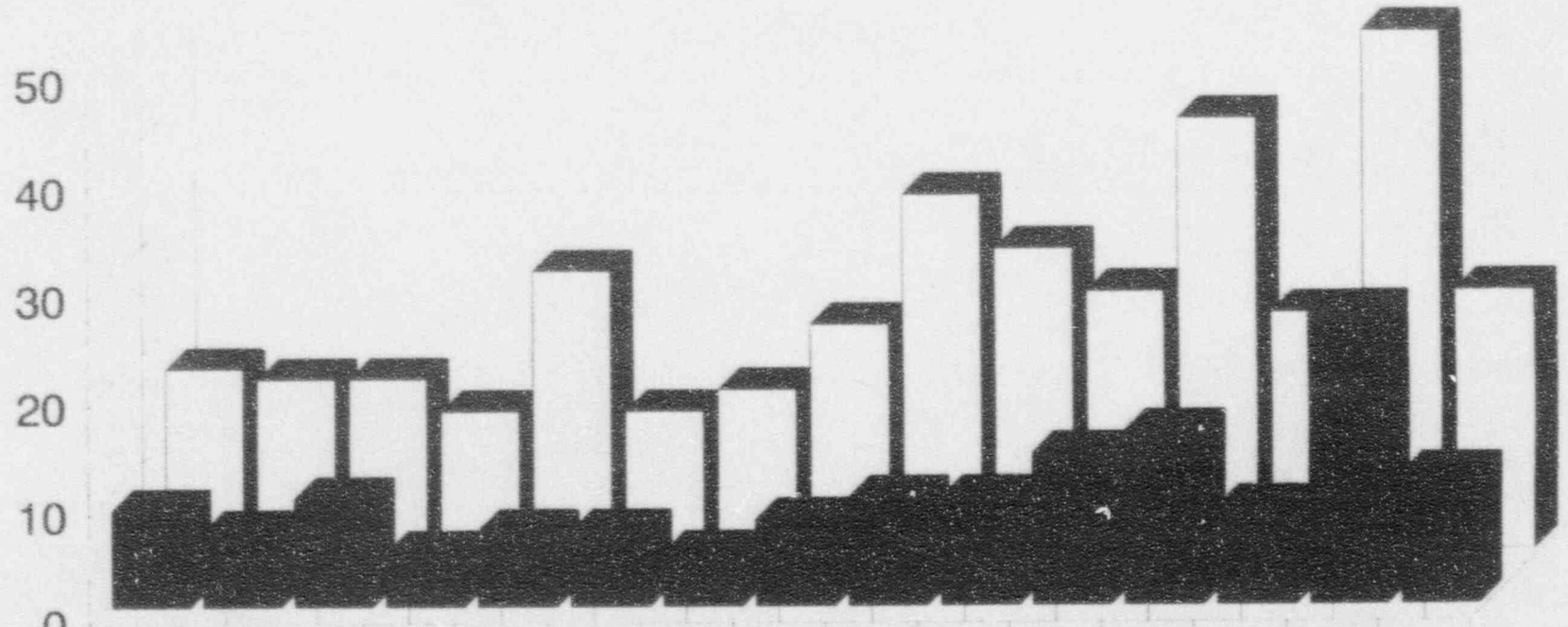
Attachment Two - Matrix for Characteristics of SIR Content and Preparation for Six SIRs

Attachment Three - Summary for Review of Corrective Action Documents by the Occurrence Review Committee

ATTACHMENT ONE

JAN/93 TO MAR/94

TOTAL OCCURANCES (OIR'S&SIR'S)
OCCURANCES W/PERSONNEL ERROR



PEOPLE	9	7	10	5	7	7	5	8	10	10	14	16	9	27	12
TOTAL	17	16	16	13	26	13	15	21	33	28	24	40	22	48	24

PEOPLE TOTAL

ATTACHMENT TWO

1.0 SIR Content and Preparation

1.1 Event Characterization

SIR/OIR Number	SIR 93-85	SIR 93-95	SIR 93-102 (SIR is incomplete.)	SIR 93-107 (SIR is incomplete.)	SIR 93-110	SIR 93-115
1.1.1 Past history relative to event, including reference to previous SIRs/OIRs for the same or related event	No	No	?	?	No	No
1.1.2 Event description, including a "big-picture" write-up	Yes	Yes	?	?	No	Yes
1.1.3 Initiating conditions	Yes	Yes	?	?	Yes	Yes
1.1.4 Chronology	Yes	Yes	?	?	No	Yes
1.1.5 Summary of actions by Control Room personnel	N/A	Yes	?	?	N/A	Yes
1.1.6 Equipment response/ troubleshooting/ recovery summary	N/A	N/A	?	?	N/A	N/A
1.1.7 Reference to sources for data and information, including the names of individuals interviewed. (Not included in this report)						
1.1.8 Root cause analysis	No	No	No	No	No	No
1.1.9 HPES investigation	No	Yes	No	No	No	No
1.1.10 Names of individual(s) who conducted the evaluations (Names not included in this report)						
1.1.11 Conclusions	Yes	Yes	?	?	Yes	Yes

Notes: SIR 93-085 Fuel Storage Building Emergency Air Cleanup System Heater Operability Surveillance Testing.
SIR 93-095 18 Month Visual Inspection and Functional Testing of the CBA - Computer Room Fire Dampers
SIR 93-102 Design Error Deleting C-16 Input to the Turbine Control System
SIR 93-107 EDG 1-B Aux. Coolant Pump Auto Started During Surveillance Testing
SIR 93-110 CBA Train A Emergency Clean-Up Filter Technical Specification
SIR 93-115 Overtemperature and Overpower Delta-Temperature Channel Check Surveillance (LER 93-022-00

ATTACHMENT THREE

North Atlantic
Energy Service Corporation

MEMORANDUM

SSP 94-
NQG 94103

Subject OCCURRENCE REVIEW COMMITTEE (94ORC02) NOTES OF MEETING

From C.J. Moynihan Date March 2, 1994

To Distribution Reference

The ORC held its second meeting on 2/23/94. The remaining corrective action documents that were initiated in January were reviewed. The ORC will meet weekly until further notice to better facilitate timely review of the corrective action documents.

ACTION ITEMS

No new action items were assigned.

STATUS OF PREVIOUS ACTION ITEMS

- Develop a definition for personnel error - (closed) a formal definition will not be developed due to the varied activities that could be subject to personnel error. A definition would be either too simplistic or too cumbersome to meet ORC's needs. Instead of a definition, ORC will rely on the experience of the committee members to determine Personnel Error and it will be reported based on the significance of the subject event.

- CDR 94-02 - Unit 2 Fuel Gripper Assembly. do the same defects exist on Unit 1? (Closed) The CDR has not been dispositioned yet, but the action plan has the Unit 2 gripper installed in Unit 1 after it's repaired (scheduled to be complete prior to OR03) and then examine the Unit 1 gripper for defects.

- OIR 94-06 and 94-07 - Both involved freezing issues - were these recurrent issues? (Closed) OIR 94-06 involved FP piping, specifically FP-V-475 which has frozen several times before. This line runs next to the turbine buildi[illegible]oll up door. The system engineer was contacted, and was cognizant of the recurrent nature of the problem. He had already initiated RES 94-85 to request heat tracing be installed to eliminate the problem. OIR 94-07 was not viewed as recurrent.

JANUARY SUMMARY

ORC members are provided the results of the review of January corrective action documents for information in an attachment to this memo. The draft Monthly Trend Report for January will be provided to ORC for review.

NEXT MEETING

The next ORC meeting will be held Monday, February 28, 1994 at 8:30 a.m. in Room 245 of the Admin Building. The meeting will last approximately 1/2 hour and will review February corrective action documents. Because of the weekly meeting frequency, the 1/2 hour duration is viewed as achievable.

C.J. Moynihan
Occurrence Review Committee Chairman

CJM/psd
Attachment

SUBJECT: ORC REVIEW CORRECTIVE ACTION DOCUMENTS FOR JANUARY 1994

There were 28 Corrective Action Documents issued in January (6 CDRs, 14 OIRs and 8 SIRs). The Occurrence Review Committee categorized these 28 by Significance Factor, Preliminary Cause, and Area of Concern. The following details are presented for your information.

SIGNIFICANCE FACTOR

High 2. (7%)	SIR 94-6:	Trip with SI due to MSIV
	SIR 94-8:	MSIV components with environmental seal problems
Moderate - 11. (39%)	SIR 94-7:	Lead paint removed without proper controls
	SIR 94-5:	Scobie line tripped during Tewksbury line bushing failure
	SIR 94-4:	Pyrocrete removed for installation but FP never notified
	SIR 94-1:	Hourly fire rounds not established soon enough for alarm
	OIR 94-13:	Repetitive QC findings on weld rod control problems
	OIR 94-12:	Rod drive MG relay actuated when closing CP door
	OIR 94-9:	Maintenance exceeded working 24 hours in 48 on bushing repair
	OIR 94-7:	S/G B feed flow instrument line frozen
	OIR 94-3:	Loss of power to reheater drain tank high level dump valve controller
	OIR 94-2:	TB elevator failure - vendor repair not controlled adequately
	CDR 94-05:	Aerial lift for insulator replacement not inspected nor personnel qualified
Low - 10. (36%)	SIR 94-3:	While performing CS0932.17, valve inadvertently was opened
	OIR 94-14:	Bits not allowed by hilti procedure were returned to tool crib
	OIR 94-11:	While cutting through welds, foul smell detected
	OIR 94-10:	CBA - Fan failed to auto start during surveillance
	OIR 94-8:	Tubing arrangement on DG air skid not correct
	OIR 94-6:	FP line frozen
	OIR 94-5:	Electrician placed wrong switchyard battery on charge
	OIR 94-4:	During Rx startups, Ops failed to comply with administrative requirements
	OIR 94-1:	Missed step while performing OS0021.02
	CDR 94-1:	RTS task type incorrectly called "Non Q"
None - 5. (18%)	SIR 94-2:	MET tower aviation obstruction light out
	CDR 94-6:	Unit 2 DG components storage program less stringent than ANSI N45.2.2
	CDR 94-4:	Vendor surface dimension out-of-tolerance
	CDR 94-3:	Rejected Bkr returned from plant but lost in warehouse
	CDR 94-2:	Unit 2 fuel gripper assembly problems

PRELIMINARY CAUSE

Cause Category			Significance Factor	
F.	Work Practices:	10 (36%)	0	High
			3	Moderate
			5	Low
			2	None
N.	Equipment Selection, Manufacture and Construction:	5 (18%)	1	High
			1	Moderate
			1	Low
			2	None
P.	Plant/System Operation:	4 (14%)	0	High
			2	Moderate
			1	Low
			1	None
L.	Managerial Methods:	3 (11%)	0	High
			3	Moderate
			0	Low
			0	None
Q.	External:	2 (7%)	0	High
			1	Moderate
			1	Low
			0	None
B.	Written Procedure & Documents:	2 (7%)	0	High
			0	Moderate
			2	Low
			0	None
O.	Maintenance/Testing:	1 (4%)	1	High
			0	Moderate
			0	Low
			0	None
G.	Work Organization/Planning:	1 (4%)	0	High
			1	Moderate
			0	Low
			0	None

AREAS OF CONCERN (MULTIPLE CATEGORIES CAN BE USED)

Category		Significance Factor	
•	Regulatory Performance (12%)		
	Trips	1	High
	LERs	1	High
	Challenges to Safety Systems	1	High
	OSHA Requirements	1	Moderate
	FAA Requirements	1	None
•	Plant Performance (15%)		
	Capacity	1	High, 1 Moderate
	Reliability	2	High, 2 Moderate
•	Performance Factors (54%)		
	Personnel Errors	4	Moderate, 5 Low
	Repetitive Occurrences	1	High, 7 Moderate, 2 Low
	Impact to Corporate Mission	1	High, 1 Moderate
	Personnel Safety	1	Moderate
•	No category assigned: (20%)	4	Low, 4 None

Based on the above information, it appears that the categories and determinations appear valid. As previously discussed, periodically, I will report to the committee and the Station Manager on the accuracy of our preliminary cause determinations based on the apparent or root cause listed in the completed Corrective Action Documents.