

December 29, 2006

CA 03-05-001

Mr. L. William Pearce
Site Vice President
FirstEnergy Nuclear Operating Company
Perry Nuclear Power Plant
P. O. Box 97, 10 Center Road, A290
Perry, OH 44081-0097

SUBJECT: PERRY NUCLEAR POWER PLANT
CONFIRMATORY ACTION LETTER (CAL) FOLLOWUP INSPECTION
CORRECTIVE ACTION PROGRAM ACTION ITEM EFFECTIVENESS
NRC INSPECTION REPORT 05000440/2006015

Dear Mr. Pearce:

The purpose of this letter is to provide you with Inspection Report (IR) 05000440/2006015, detailing the results of a Confirmatory Action Letter (CAL) Followup inspection in the Corrective Action Program area. During this inspection, we assessed the effectiveness of the actions that you completed to address issues associated with the implementation of your corrective action program. You and other members of your staff attended the December 13, 2006, public exit meeting held at the Quail Hollow Resort in Painesville, Ohio, during which the results of this CAL Followup inspection activity were presented. A summary of the public meeting was documented in a letter to you dated December 15, 2006.

As a result of poor performance, the Nuclear Regulatory Commission (NRC) designated the Perry Nuclear Power Plant as a Multiple/Repetitive Degraded Cornerstone column facility in the NRC's Action Matrix in August 2004. Accordingly, a supplemental inspection was performed in accordance with Inspection Procedure (IP) 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input." As documented in IP 95003 Supplemental Inspection Report 05000440/2005003, the NRC determined Perry was being operated safely. The NRC also determined that the programs and processes to identify, evaluate, and correct problems, as well as other programs and processes in the Reactor Safety strategic performance area were adequate. Notwithstanding these overall conclusions, the NRC determined that the performance deficiencies that occurred prior to and during the inspection were often the result of the inadequate implementation of your corrective action program.

By letters dated August 8 and 17, 2005, you responded to the findings and observations detailed in our IP 95003 supplemental inspection report. As discussed in these letters, the Perry management team reviewed the achievements realized by the Performance Improvement Initiative (PII), NRC findings documented in the IP 95003 supplemental inspection report, and the conclusions from various assessments, and developed updates to the PII. The Perry management team restructured the PII into the Phase 2 PII, which contained six new initiatives with the overall purpose of implementing lasting actions to improve the overall performance at the Perry Nuclear Power Plant. These actions included actions to address the issues associated with the implementation of your corrective action program.

On March 14, 2006, the NRC completed a CAL Followup inspection in the Corrective Action Program area that reviewed selected commitments and action items described in the Perry Phase 2 PII Detailed Action and Monitoring Plan (DAMP), and your August 8 and 17, 2005, letters. Based on the inspection results, the NRC concluded that with few exceptions, the commitments and action items that were reviewed had been satisfactorily implemented. However, the NRC also identified some cases in which your implementation of these actions was weak, which potentially impacted the overall ability to effectively resolve these issues. A complete discussion of the findings and other observations from this inspection is documented in NRC Inspection Report 05000440/2006008.

The purpose of this inspection was to review the overall effectiveness of your actions to address the Corrective Action Program area of the CAL and determine whether any additional inspection in this area beyond that prescribed by the Reactor Oversight Process (ROP) baseline inspection program is required. As such, the inspection objectives were to: 1) determine whether actions to address issues in your program for identifying, assessing, and correcting performance deficiencies were effective; and 2) determine whether corrective action program monitoring tools, such as Key Performance Indicators (KPIs), reflected a sustained improvement in the implementation of the corrective action program and whether corrective actions are identified and implemented, as required, based upon the KPI data. In addition, the scope of this inspection satisfies the requirements of the ROP to conduct a biennial Problem Identification and Resolution inspection.

With regard to your actions to address issues in your program for identifying, assessing, and correcting performance deficiencies, we focused on a number of areas. These areas included the resolution of specific deficiencies that had been entered into your corrective action program for resolution, the conduct and results of meetings associated with the resolution of identified issues, the effectiveness of audits and assessments, the implementation of the Employee Concerns Program, and the use of industry operating experience information.

Overall, we concluded that your performance in all of these areas had measurably improved and in some cases this improvement was significant. Notwithstanding this overall improvement, we continued to identify some corrective action program implementation issues during the inspection and other areas in which the program could be enhanced. Although most of these issues were considered minor in nature, one issue was determined to be a finding of very low safety significance.

In addition, following our review of the Perry KPI program and the overall results of your KPI initiative, we concluded that the corrective action program KPI results indicate that the program has been adequately implemented and that the implementation of the corrective action program at the site has improved. We also concluded that corrective action program issues can be identified through observable trends in KPI data and that your actions to address these issues are adequate.

Therefore, based on the measurable improvements realized from the implementation of your CAL commitments and other actions taken to address the corrective action program, the NRC has concluded that actions to address the Corrective Action Program Effectiveness area of the Perry CAL have been effective. As a result, the NRC currently plans no additional inspections in this area beyond that which is normally prescribed by the ROP baseline inspection program.

Based on the results of this inspection, one finding of very low safety significance that involved a violation of NRC requirements was identified. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this violation as a non-cited violation (NCV) in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of this non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-001; and the Resident Inspector Office at the Perry Nuclear Power Plant.

Notwithstanding our conclusions regarding your implementation of the corrective action program, the NRC will continue to provide increased oversight of activities at your Perry Nuclear Power Plant pending a determination of whether the effectiveness of your corrective actions can be sustained. Consistent with Inspection Manual Chapter (IMC) 0305 guidance regarding the oversight of plants in the Multiple/Repetitive Degraded Cornerstone column of the NRC's Action Matrix, the NRC will continue to assess performance at Perry and will consider at each quarterly performance assessment review the following options: (1) declaring plant performance to be unacceptable in accordance with the guidance in IMC 0305; (2) transferring the facility to the IMC 0350, "Oversight of Reactor Facilities in a Shutdown Condition Due to Significant Performance and/or Operational Concerns" process; and (3) taking additional regulatory actions, as appropriate. Until you have demonstrated lasting and effective corrective actions, Perry will remain in the Multiple/Repetitive Degraded Cornerstone column of the NRC's Action Matrix.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Mark A. Satorius, Director
Division of Reactor Projects

Docket No. 50-440
License No. NPF-58

Enclosure: Inspection Report 05000440/2006015
w/Attachments:

1. Supplemental Information
2. Perry Performance Background
3. Perry IP 95003 Inspection Results
4. Summary of Phase 2 PII Initiatives

cc w/encl: G. Leidich, President and Chief Nuclear Officer - FENOC
J. Hagan, Senior Vice President of Operations and Chief
Operating Officer - FENOC
D. Pace, Senior Vice President, Fleet Engineering - FENOC
J. Rinckel, Vice President, Fleet Oversight
Director, Site Operations
Director, Regulatory Affairs
Manager, Fleet Licensing
Manager, Site Regulatory Compliance
D. Jenkins, Attorney, FirstEnergy
Public Utilities Commission of Ohio
Ohio State Liaison Officer
R. Owen, Ohio Department of Health

L. W. Pearce

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D. Pace, Senior Vice President, Fleet Engineering - FENOC
J. Rinckel, Vice President, Fleet Oversight
Director, Site Operations
Director, Regulatory Affairs
Manager, Fleet Licensing
Manager, Site Regulatory Compliance
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R. Owen, Ohio Department of Health

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-440

License No: NPF-58

Report No: 05000440/2006015

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Perry Nuclear Power Plant

Location: 10 Center Road
Perry, Ohio 44081

Dates: November 6 through December 13, 2006

Inspectors: G. Wright, Team Leader, Project Engineer,
DRP Branch 6, RIII
D. Karjala, Resident Inspector, Prairie Island, RIII
T. Steadham, Resident Inspector, Fermi, RIII
R. Ruiz, Reactor Engineer, DRP Branch 6, RIII
P. Pelke, Enforcement Specialist, RIII

Approved by: Eric R. Duncan, Chief
Branch 6
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000440/2006015; 11/6/2006 - 12/13/2006; Perry Nuclear Power Plant; Confirmatory Action Letter (CAL) Followup Inspection - Corrective Action Program Action Item Effectiveness

This report covers a 2-week period of onsite supplemental inspection activities by resident and region-based inspectors. This inspection identified one Green finding which involved a non-cited violation of NRC requirements. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." Findings for which the Significance Determination Process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Barrier Integrity

Green. A finding of very low safety significance and an associated non-cited violation of Technical Specification 5.4.1.a, "Procedures," was self-revealed when the lower outer containment airlock door failed to close as a result of improper maintenance on the door about 3 months prior to the failure. As part of the licensee's immediate corrective actions, the door was repaired and the event was discussed with involved maintenance personnel.

This finding was greater than minor because the finding was associated with the Human Performance attribute of the Barrier Integrity cornerstone and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents. The inspectors determined that the issue was of very low safety significance because the finding did not represent an actual open pathway in the physical integrity of reactor containment, or involve an actual reduction in defense-in-depth for the atmospheric pressure control or hydrogen control functions of the reactor containment. This finding had a cross-cutting aspect in the area of human performance because licensee personnel failed to appropriately plan work activities to incorporate the need for planned contingencies, compensatory actions, and abort criteria. (Section 3.2)

B. Licensee-Identified Violations

None.

EXECUTIVE SUMMARY

The purpose of this inspection was to assess the overall effectiveness of the licensee's actions to address the Corrective Action Program area of the NRC's Confirmatory Action Letter (CAL) that was issued to FirstEnergy Nuclear Operating Company (FENOC) on September 28, 2005, and determine whether any additional inspection beyond that prescribed by the Reactor Oversight Process (ROP) baseline inspection program is required.

As such, the inspection objectives were to:

- Determine whether actions to address issues in the licensee's program for identifying, assessing, and correcting performance deficiencies were effective.
- Determine whether corrective action program monitoring tools, such as Key Performance Indicators (KPIs), reflected an improvement in the implementation of the corrective action program and whether corrective actions were identified and implemented, as required, based upon the KPI data that was collected.

To determine whether actions to address issues in the licensee's program for identifying, assessing, and correcting performance deficiencies were effective, the inspectors focused on the following areas:

- Licensee identification and evaluation of performance deficiencies and those corrective actions to address those performance deficiencies, such as significant conditions adverse to quality (SCAQs); conditions adverse to quality (CAQs); inadequate corrective actions identified through licensee corrective actions effectiveness reviews; previously identified non-cited violations (NCVs); reportable events and actual events involving the callout of the Emergency Response Organization (ERO); previous Corrective Action Program Action Item Effectiveness inspection observations; and previous IP 95003 inspection observations;
- Management Alignment and Ownership Meeting (MAOM), Management Review Board (MRB) and Corrective Action Review Board (CARB) meeting observations;
- Effectiveness of audits and assessments performed by the Oversight group, line organizations, and external organizations;
- Employee willingness to use, and effectiveness of, the Employee Concerns Program (ECP); and
- Effectiveness of the licensee's use of industry information (operating experience) for previously identified performance issues.

To determine whether corrective action program monitoring tools, such as KPIs, reflected an improvement in the implementation of the corrective action program and whether corrective actions were identified and implemented, as required, based upon the KPI data that was collected, the inspectors focused on the following areas:

- The results of corrective action program KPIs and whether issues have been identified, when appropriate, and whether appropriate corrective actions have been identified and implemented to address those issues.
- The results of corrective action program KPIs and whether the frequency and significance of corrective action program related issues were consistent with KPI data and indicated that implementation of the corrective action program had improved.

With regard to the identification, evaluation, and correction of performance deficiencies, the inspectors determined that significant improvements had been realized. For example, a significant improvement in the overall quality of root cause assessments was identified. In addition, human and organizational performance issues categorized as SCAQs were more frequently evaluated through root cause and apparent cause evaluations. The inspectors also determined that the licensee had begun to implement limited apparent cause evaluations to supplement root cause and full scope apparent cause evaluations. This new category resulted in an overall increase in the total number of CAQ-related condition reports that required more thorough evaluations. Notwithstanding this overall improvement, the inspectors continued to identify some corrective action program implementation issues during the inspection and other areas in which the program could be enhanced. One issue was determined to be a finding of very low safety significance.

During the observations of meetings associated with the resolution of issues entered into the licensee's corrective action program, such as MAOM, MRB, and CARB meeting, the inspectors determined that identified issues were adequately discussed and condition reports were properly categorized.

In the audit and assessment review area, the audits and assessments reviewed were determined to have an appropriate scope and depth to assess the corrective action program. These audits and assessments were also determined to be critical with an appropriately balanced internal and external representation.

In the area of ECP implementation, the inspectors did not identify any weaknesses in the ECP that contributed to station performance deficiencies or adversely impacted the establishment of a Safety Conscious Work Environment (SCWE). The nuclear safety concerns that had been identified through the ECP were appropriately addressed through the corrective action program.

In the operating experience program area, the inspectors identified a substantial improvement. Issues that the Perry staff became aware of through operating experience information were identified to be thoroughly assessed.

Following the review of the implementation of corrective action program monitoring tools, the inspectors concluded that the corrective action program KPI results indicated that the program had been adequately implemented and that the implementation of the corrective action program at the site had improved. The inspectors also concluded that corrective action program issues could be identified through observable trends in KPI data and that the licensee's actions to address these issues were adequate.

Therefore, based upon a review of the licensee's implementation of the corrective action program during this inspection and a review of KPI results, the inspectors concluded that the licensee's corrective actions have been effective in improving the implementation of the corrective action program. As a result, the NRC currently plans no additional inspections in this area beyond that which is normally prescribed by the ROP baseline inspection program.

REPORT DETAILS

1.0 Background

As a result of poor performance, the Nuclear Regulatory Commission (NRC) designated the Perry Nuclear Power Plant as a Multiple/Repetitive Degraded Cornerstone column facility in the NRC's Action Matrix in August 2004. A summary of the performance issues that resulted in this designation is discussed in Attachment 2, "Perry Performance Background," of this report.

In accordance with Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," a supplemental inspection was performed in accordance with Inspection Procedure (IP) 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input." As documented in IP 95003 Supplemental Inspection Report 05000440/2005003, the NRC determined Perry was being operated safely. The NRC also determined that the programs and processes to identify, evaluate, and correct problems, as well as other programs and processes in the Reactor Safety strategic performance area were adequate.

Notwithstanding these overall conclusions, the NRC determined that the performance problems that occurred were often the result of inadequate implementation of the corrective action program. The IP 95003 inspection team identified that a number of factors contributed to corrective action program problems. A lack of rigor in the evaluation of problems was a major contributor to ineffective corrective actions. For example, when problems were identified, a lack of technical rigor in the evaluation of those problems, at times, resulted in an incorrect conclusion, which in turn affected the ability to establish appropriate corrective actions. The IP 95003 inspection team also determined that corrective actions were often narrowly focused. In many cases a single barrier was established to prevent a problem from recurring; however, other barriers were also available that, if identified and implemented, would have provided a defense-in-depth against the recurrence of problems. The IP 95003 inspection team also identified that problems were not always appropriately prioritized, which led to the untimely implementation of corrective actions.

A number of programmatic issues were identified that had resulted in the observed corrective action program weaknesses. For example, the IP 95003 inspection team identified a relatively high threshold for classifying deficiencies for root cause analysis. As a result, few issues were reviewed in detail. In addition, for the problems that were identified that required a root cause evaluation, the IP 95003 inspection team found that the qualification requirements for root cause evaluators were limited and multi-disciplinary assessment teams were not required. The IP 95003 inspection team also identified that a lack of independence of evaluators existed. This resulted in the same individuals repeatedly reviewing the same issues without independent and separate review. In addition, the IP 95003 inspection team identified weaknesses in the trending of problems, which hindered the ability to correct problems at an early stage before they became more significant issues. Finally, the IP 95003 inspection team determined that a lack of adequate effectiveness reviews was a barrier to the

identification of problems with corrective actions that had been implemented. A summary of all of the IP 95003 inspection results is discussed in Attachment 3, "Perry IP 95003 Inspection Results," of this report.

By letter dated September 30, 2004, and prior to the NRC's IP 95003 inspection activities, FirstEnergy Nuclear Operating Company (FENOC) advised the NRC that actions were underway to improve plant performance. To facilitate these performance improvements, FENOC developed the Perry Performance Improvement Initiative (PII). As documented in the IP 95003 supplemental inspection report, in the assessment of the performance improvements planned and implemented through the PII, the NRC determined that the PII had a broad scope and addressed many important performance areas. The IP 95003 inspection team also observed that although substantially completed, the PII had not resulted in a significant improvement in plant performance in several areas, including the licensee's implementation of the corrective action program.

By letters dated August 8, 2005, "Response to NRC Inspection Procedure 95003 Supplemental Inspection, Inspection Report 05000440/2005003," (ML052210512) and August 17, 2005, "Corrections for Response to NRC Inspection Procedure 95003 Supplemental Inspection, Inspection Report 05000440/2005003," (ML052370357) the licensee responded to the inspection results documented in the IP 95003 supplemental inspection report.

As discussed in these letters, the Perry leadership team reviewed the achievements realized by the PII, the results of the NRC's IP 95003 supplemental inspection activities, and the conclusions from various additional assessments, and developed updates to the Perry PII. The Perry leadership team restructured the PII, referred to as the Phase 2 PII, into the following six initiatives that are briefly described in Attachment 4, "Summary of Phase 2 PII Initiatives," of this report:

- Corrective Action Program Implementation Improvement
- Excellence in Human Performance
- Training to Improve Performance
- Effective Work Management
- Employee Engagement and Job Satisfaction
- Operational Focused Organization

In addition to a discussion of the Phase 2 PII, the licensee's August 8 and August 17 letters also included actions planned to address the NRC's findings and observations detailed in the IP 95003 supplemental inspection report. Attachment 3 of those letters, "Actions to Address Key Issues Identified in the IP 95003 Inspection Report," focused on the following areas and summarized the actions that FENOC had taken, or planned to take, to address those issues:

- Implementation of the Corrective Action Program
- Human Performance
- Performance Improvement Initiative
- IP 95002 Inspection Follow-Up Issues
- Emergency Planning

On March 14, 2006, the NRC completed a CAL Followup Inspection in the Corrective Action Program area that reviewed selected commitments and action items described in the Perry Phase 2 PII Detailed Action and Monitoring Plan (DAMP) and the licensee's August 8 and August 17, 2005, letters. No findings of significance were identified during the inspection, and the CAL Followup inspection team confirmed that all three completed commitments associated with the corrective action program were adequately implemented. However, notwithstanding this overall positive result, the team also identified that 4 of the 31 action items that were reviewed had not been implemented to a level that was considered adequate by the NRC to allow these items to be considered closed. The reasons for this varied. In one case, the team identified that one of the completed actions inadvertently invalidated the qualifications for all root cause evaluators, which required that the corrective action be rescinded. In another case, an action was improperly re-classified as a temporary measure. In a third case, a section of a procedure was not revised as required by an action, although other sections were properly revised. And in a final case, a sufficient number of examples of the accomplishment of an action were not present for the action to be considered to have been implemented.

The March 14, 2006, CAL Followup inspection team also verified that Key Performance Indicators (KPIs) for the corrective action program had been developed and were adequately maintained. The KPIs defined thresholds for acceptable performance for specific corrective action program functions and tracked actual numbers or percentages against the pre-defined thresholds. The performance level for each KPI was color-coded to facilitate performance monitoring. The licensee's expectation for yellow or red KPIs was that a condition report should be generated and corrective actions should be implemented to address the issue. The team reviewed a number of condition reports that had been generated to document red and yellow KPIs. The corrective action program was used to track the development and implementation of corrective actions to improve performance. The team also noted that a number of actions had been implemented to improve corrective action program performance when program performance expectations were not met. Management feedback to corrective action owners, the appointment of management sponsors for corrective action program products, and the analysis and development of a closure plan to address KPI performance gaps were all examples of actions implemented to address corrective action program performance issues. However, a formal mechanism to address KPI issues within the licensee's corrective action program did not exist. In particular, licensee personnel had not developed written guidance that prescribed the generation of a condition report to address declining KPIs, performance gaps between actual and expected performance, the development of action plans to reduce the gap between actual and expected performance, or the tracking of the success of action plans to address identified performance deficiencies. The team concluded that the lack of a formal process to address KPI issues could impact the long-term effectiveness of the actions. Licensee personnel generated CR 06-00787, "Inconsistencies With GAP Closure Plans for Red/Yellow Corrective Action Program KPIs," to enter this issue into the corrective action program.

A complete discussion of the observations from this previous inspection is documented in NRC Inspection Report 05000440/2006008.

2.0 Inspection Scope

The purpose of this inspection was to assess the overall effectiveness of the licensee's actions to address the Corrective Action Program area of the NRC's CAL and determine whether any additional inspection beyond that prescribed by the Reactor Oversight Process (ROP) baseline inspection program is required. In addition, the scope of this inspection satisfies the requirements of the ROP to conduct a biennial Problem Identification and Resolution inspection (IP 71152).

As such, the inspection objectives were to:

- Determine whether actions to address issues in the licensee's program for identifying, assessing, and correcting performance deficiencies were effective.
- Determine whether corrective action program monitoring tools, such as KPIs, reflected an improvement in the implementation of the corrective action program and whether corrective actions were identified and implemented, as required, based upon the KPI data that was collected.

Licensee Program for Identifying, Assessing, and Correcting Deficiencies

To determine whether actions to address issues in the licensee's program for identifying, assessing, and correcting performance deficiencies were effective, the inspectors focused on the following areas:

- Licensee identification, evaluation of, and corrective actions to address performance deficiencies, such as significant conditions adverse to quality (SCAQs); conditions adverse to quality (CAQs); inadequate corrective actions identified through licensee corrective actions effectiveness reviews; previously identified non-cited violations (NCVs); reportable events and actual events involving the call-out of the Emergency Response Organization (ERO); Corrective Action Program Action Item Effectiveness inspection observations; and IP 95003 inspection observations.
- Management Alignment and Ownership Meeting (MAOM), Management Review Board (MRB) and Corrective Action Review Board (CARB) meeting observations.
- Effectiveness of audits and assessments performed by the Oversight group, line organizations, and external organizations;
- Employee willingness to use and effectiveness of the Employee Concerns Program (ECP); and
- Effectiveness of the licensee's use of industry information (operating experience) for previously identified performance issues.

Corrective Action Program Key Performance Indicators

To determine whether corrective action program monitoring tools, such as KPIs, reflected an improvement in the implementation of the corrective action program and whether corrective actions were identified and implemented, as required, based upon the KPI data that was collected, the inspectors focused on the following areas:

- The results of corrective action program KPIs and whether issues have been identified, when appropriate, and whether appropriate corrective actions have been identified and implemented to address those issues.
- The results of corrective action program KPIs and whether the frequency and significance of corrective action program related events were consistent with KPI data and indicated that the implementation of the corrective action program had improved.

3.0 Licensee Program for Identifying, Assessing, and Correcting Deficiencies

The inspectors conducted a review of the licensee's condition reporting system and related programs focusing on evaluating the licensee's ability to identify, assess, and effectively correct performance deficiencies. With regard to the review of the licensee's corrective actions to address performance deficiencies, the inspectors reviewed condition report classifications, the thoroughness of evaluations, the identification of appropriate corrective actions to address identified issues, and the implementation of corrective actions.

3.1 Significant Conditions Adverse to Quality (SCAQs) Review

a. Inspection Scope

The inspectors reviewed condition reports and corrective action closure documentation, including root cause evaluation reports and effectiveness review reports for all SCAQs and a sample of apparent cause evaluations conducted between May 2005 and November 2006.

b. Observations and Findings

No findings of significance were identified. The inspectors determined that issues and associated corrective actions had been assigned appropriate significance levels and priorities. Further, on numerous occasions, the licensee used multi-disciplinary teams to review complex issues. For example, the root cause evaluation associated with condition report (CR) 06-00670, "Fire in Control Complex Due to Control Complex Miscellaneous Ventilation Fan 2B," was performed by operations, engineering, and training personnel and included a root cause evaluation specialist. Likewise, the root cause evaluation associated with CR 06-03047, "MEOD [Maximum Extended Operating Domain] Boundary Line Exceeded During Power Ascension," was performed by operations, work management, reactor engineering, design engineering, and licensed

operator training personnel, and included two root cause evaluation specialists. Another positive example was associated with CR 06-09966, "Timely Escalation of Potentially Significant or Important Issues," that was generated to evaluate the human performance aspects of the organization's failure to identify potentially significant issues associated with CR 06-09781, "Division 2 Diesel Generator Head Nut Torques."

The inspectors also confirmed that the techniques used to evaluate SCAQs, such as barrier analysis, structured interviews, and event and causal factor charting, were appropriate and properly implemented. Also, human performance issues were addressed within the root cause analyses for the condition reports rather than being re-assigned to lower significance condition reports. In addition, the inspectors confirmed that appropriate assessment tools such as Human Performance Enhancement System, TapRoot Analysis, and Performance Improvement International analysis were used to address human performance issues. The inspectors also noted that the licensee had implemented timeliness expectations for root cause analysis completion to ensure issues were reviewed and corrective actions were implemented in a timely manner.

The following issues that met the definition in IMC 0612 as being minor in nature were identified:

- The inspectors identified differing definitions of the term "Root Cause" in guidance documents and training materials, which could potentially result in differing interpretations and subsequent root cause analysis outcomes.
- Although the inspectors were able to verify that corrective actions addressed identified causes, on occasion, the condition report documentation was not "stand alone" and a discussion with knowledgeable licensee personnel was necessary to confirm that corrective actions had been accomplished.

3.2 Conditions Adverse to Quality Review - CR 06-04006, "Lower Airlock Door Inoperable"

a. Inspection Scope

The inspectors reviewed a sample of CAQ-related condition reports and associated cause analyses conducted between May 2005 and November 2006. During this review, the inspectors reviewed CR 06-04006, "Lower Airlock Door Inoperable," to determine if the apparent cause evaluation was performed adequately. The condition report documented an event in which the lower outer containment airlock door would not close.

The inspectors reviewed the scope of the work performed to restore the door to service, associated maintenance work orders, and previous condition reports. The inspectors also determined whether the maintenance instructions were adequately detailed to perform the work, whether the work was performed in accordance with approved procedures, whether the procedures clearly identified appropriate acceptance criteria, and whether the acceptance criteria were met.

b. Observations and Findings

Introduction: A finding of very low safety significance and an associated non-cited violation (NCV) of Technical Specification (TS) 5.4.1.a, "Procedures," was self-revealed when licensee personnel failed to properly perform maintenance on the lower outer containment airlock door in June 2006. As a result, the door failed 3 months later.

Description: On June 14, 2006, while attempting to enter containment through the lower outer containment airlock door, licensee personnel identified that the "unsafe light" was illuminated, prohibiting access. Licensee personnel declared the door inoperable and completed the associated TS action statements, which included a verification that the lower inner containment airlock door was operable and actions to lock the inner containment airlock door closed. Licensee personnel also generated CR 06-02681, "Lower Containment Outer Door Unsafe Light Lit," to enter this issue into the corrective action program. In addition, Work Order (WO) 200214487 was generated, which prescribed the troubleshooting and repair activity to be performed to correct the problem.

Maintenance was performed through the Fix-It-Now (FIN) process, which was routinely used to perform minor maintenance activities not anticipated to require detailed planning or scheduling. Work Order 200214487 identified the work as safety-related with non-ASME [American Society of Mechanical Engineers] components, because the problem was believed to be electrical in nature. The only work instructions in the work package provided to the mechanic were: "Troubleshoot & correct cause of 'unsafe' indicator light for the lower outer door. PMT [Post-Maintenance Testing]: verification of proper operation & indication." Although not referenced in the work order, mechanics referred to Generic Mechanical Instruction (GMI)-0176, "Containment Airlock Door Maintenance," to remove a cover and gain access to the containment airlock door mechanism to perform the troubleshooting and repair activity. After the cover was removed from the mechanism, maintenance personnel identified that a large seal jam nut on the operating mechanism gear was loose, which had allowed the mechanism gear to slip and bend the stem on the three-way ball valve used to inflate the door seals. Because the valve was part of the of the door seal inflation mechanism, it was classified as an ASME component.

Maintenance personnel diagnosed the cause of the illuminated "unsafe light" as being related to the bent valve stem and loose gears, and proceeded to correct the problem. In the absence of specific instructions to straighten the bent valve stem, the mechanics continually cycled the airlock door open and closed, forcing the gears to mesh with one another and the stem to straighten out sufficiently for the ball valve to rotate. Mechanics then removed the gear from the stem and re-torqued the valve packing in accordance with GMI-0176. After reinstalling the gear and the mechanism cover, the door appeared to function properly, although the ball valve stem remained slightly bent. CR 06-02691, "Bent Valve Stem - Lower Containment Airlock," and Notification 600308807 were also generated to replace the valve. However, neither CR 06-02691 or Notification 600308807 documented that the stem had been straightened, nor was the condition

report appropriately coded as a non-conforming condition. Operations personnel subsequently declared the door operable, returned the door to service, and exited the TS action statement.

On September 4, 2006, during a routine containment entry through the lower outer containment airlock door, the door would not close and the unsafe light was again illuminated. Operations personnel declared the door inoperable, generated CR 06-04006 to enter the issue into the corrective action program, and initiated Notification 600326397 to troubleshoot the problem. To address the issue, maintenance personnel subsequently replaced the ball valve through a maintenance work order.

The licensee performed an apparent cause evaluation (ACE) of the September failure and determined that the actions implemented in June to straighten the ball valve stem contributed to the September failure. Specifically, the June repair weakened the shaft and left it slightly bent, but straight enough for the door to operate immediately following maintenance. However, with the ball valve stem degraded, an abnormally high torque on the door mechanism was required to open and close the door, which further stressed the valve stem and resulted in the failure of the door in September.

In addition to concluding that the September failure was due to improper maintenance, the ACE concluded that the cause of the event was the failure to classify CR 06-02691 as a non-conforming condition report; however, the scope of the ACE did not include a determination of why the stem had been straightened. The inspectors noted that the ACE narrowly focused on the limited work instructions provided in the work order, and failed to question the adequacy of those instructions or the failure to follow other plant procedures that would have prohibited straightening the stem by the method used.

The inspectors questioned why the evaluation did not pursue why the stem needed to be straightened in June, why the mechanics performed the repairs without appropriate procedural guidance, and why the mechanics had not adhered to NOP-WM-4006, "Conduct of Maintenance."

The inspectors determined that the instructions through which maintenance personnel conducted the repair in June were inadequate. The work instruction only prescribed that FIN personnel, "troubleshoot and correct the cause..." of the illuminated unsafe light. The only procedure used during the maintenance activity, GMI-0176, provided, "general instructions for rebuilding Contromatics ball valves and performing mechanical interlock adjustments on Containment airlock doors." The maintenance performed in June neither rebuilt the ball valve nor performed mechanical interlock adjustments. The inspectors also determined that the June maintenance activity was not a skill-of-the-craft activity as defined in NOP-WM-4006.

Step 4.10.1 of NOP-WM-4006 required that maintenance personnel stop work if a procedure needed to be modified to complete the task. Further, Step 4.1.2.6 of NOP-WM-9001, "FIN/Minor/Toolpouch Maintenance Process," excluded work from the FIN process if it could compromise the function of an ASME component during the conduct of or as a result of the work. Because neither of the guidance documents provided information on straightening the ball valve stem, a procedure modification was

required to complete the task. By procedure, because a procedure modification was required, the maintenance activity should have been suspended. However, the work was not stopped nor were any procedures revised. Further, the order classified the work as non-ASME, but the mechanics performed work on the ball valve, which was an ASME component. In the absence of an evaluation concluding otherwise, the straightening of the ball valve stem should have been recognized as an activity that was outside the scope of the FIN process because it could have affected the function of the safety-related valve. The inspectors concluded that licensee personnel failed to properly adhere to both NOP-WM-4006 and NOP-WM-9001.

Analysis: The inspectors determined that the failure to provide adequate work instructions and the failure to adhere to procedures for work associated with a safety-related component was a performance deficiency warranting a significance evaluation. The inspectors concluded that the finding was greater than minor in accordance with Appendix B, "Issue Screening," of IMC 0612, "Power Reactor Inspection Reports," because the finding was associated with the Human Performance aspect of the Barrier Integrity cornerstone and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents. Specifically, the improper maintenance performed on the door resulted in a repeat failure about 3 months later and an unplanned TS Limiting Condition for Operation entry.

The inspectors completed a significance determination of this issue using Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," of IMC 0609, "Significance Determination Process (SDP)," dated November 22, 2005. The inspectors concluded that only the Barrier Integrity cornerstone was affecting the inability to close the lower outer containment airlock door affecting the containment barrier. Because the lower inner containment airlock door remained operable while the outer door was inoperable during all relevant periods, this finding was of very low safety significance because the finding did not represent an actual open pathway in the physical integrity of reactor containment, or involve an actual reduction in defense-in-depth for the atmospheric pressure control or hydrogen control functions of the reactor containment. This finding had a cross-cutting aspect in the area of human performance because licensee personnel failed to appropriately plan work activities to incorporate the need for planned contingencies, compensatory actions, and abort criteria.

Enforcement: Technical Specification 5.4.1.a, "Procedures," required, in part, that written procedures be established and implemented for the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Section 9.a, "Procedures for Performing Maintenance," recommended that maintenance that can affect the performance of safety-related equipment be properly pre-planned and performed in accordance with written procedures or documented instructions appropriate to the circumstances. Maintenance Work Order 200214487 directed maintenance personnel to perform non-ASME related work on the safety-related lower containment airlock outer door. Step 4.1.2.6 of licensee procedure NOP-WM-9001, Revision 2, excluded work from the FIN process if it

could compromise the function of an ASME component during the conduct of or as a result of the work. Step 4.10.1 of licensee procedure NOP-WM-4006, Revision 1, required that maintenance personnel stop work if a procedure needed to be modified to complete a task. Contrary to the above, on June 14, 2006, licensee personnel: (1) used the FIN process to perform work on an ASME component that could have compromised the function of the component; (2) failed to provide appropriate work instructions or procedures for the scope of work actually performed; and, (3) failed to stop work when the work could not be performed without modifying either procedure GMI-0176 or the maintenance work order instructions. However, because the finding was determined to be of very low safety significance and was entered into the licensee's corrective action program (CR 06-04006 and CR 06-10130), this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy, NUREG-1600 (NCV 05000440/2006015-01).

3.3 Other Condition Adverse to Quality Reviews

a. Inspection Scope

The inspectors reviewed a sample of CAQ-related condition reports and associated cause analyses conducted between May 2005 and November 2006 and determined whether identified issues had been adequately addressed.

b. Observations and Findings

No findings of significance were identified. The inspectors determined that condition reports that were identified to involve CAQs were appropriately characterized and that corrective actions that were implemented to address these issues were appropriate with the exception of the following issues that met the definition in IMC 0612 as being minor in nature:

- CR 06-09781, "Division 2 Diesel Generator Head Nut Torques"

CR 06-09781 documented that in some cases Division 2 emergency diesel generator (EDG) head nuts were discovered under-torqued and in other cases were discovered over-torqued. During the initial review of the CR 06-09781, the condition report originator, condition report reviewer, reviewing senior reactor operator, and all of the the condition report screening committee members failed to recognize the potential significance of the issue, including the potential impact on the operability of the Division 1 EDG, and improperly categorized the condition report as "close to trend." After the resident inspector questioned this categorization, and prior to licensee Management Review Board (MRB) review, senior site management took appropriate actions to evaluate the condition. Licensee personnel subsequently generated CR 06-09966, "Timely Escalation of Potentially Significant or Important Issues," which was categorized as a SCAQ, to determine how a potentially significant operability issue had not been recognized during the condition report screening process. The organization's

failure to recognize the potential impact on the operability of the Division 1 EDG allowed the condition to exist for almost 72 hours before being appropriately addressed.

- CR 06-00831, "PCIV [Primary Containment Isolation Valve] 1G33F0054 Blown Control Power Fuse"

CR 06-00831 was generated to document a failed relay in the reactor water cleanup system. A root cause analysis identified "zinc whiskers" on the relay as a contributing cause. However, the inspectors identified that licensee personnel failed to review the issue for 10 CFR Part 21 reportability. Licensee personnel generated CR 06-9958, "Potential 10 CFR Part 21 Issue With Electrical Relays" to enter this issue into the corrective action program.

- CR 06-03002, "Semi-Annual Site Common Cause Analysis"

CR 06-03002 was generated to enter issues identified during the semi-annual site common cause analysis into the corrective action program. The inspectors noted that a root cause evaluation, which included proposed corrective actions, was completed on July 28, 2006. Subsequently, the CARB rejected these initial corrective actions and requested that revised corrective actions be developed and presented to CARB by November 19, 2006. The inspectors questioned whether a delay of nearly 3 months for a re-review was appropriate. Licensee personnel subsequently generated CR 06-9996, "CA [Corrective Action] Plan Not Final Over 3 Months After Investigation Complete," to address this question and enter this issue into the corrective action program.

- CR 06-00318, "RCIC [Reactor Core Isolation Cooling] Flow Controller Did Not Control in Automatic"

The inspectors identified that the resolution of CR 06-00318 proposed a replacement frequency for the RCIC flow controller that did not appear to be appropriate when compared with recent failure history. Licensee personnel generated CR 06-09889, "Corrective Actions Lacking Clarity," to enter this issue into the corrective action program.

- Although the inspectors were able to verify that corrective actions addressed identified causes, on occasion, the condition report documentation was not "stand alone" and a discussion with knowledgeable licensee personnel was necessary to confirm that corrective actions had been accomplished.

The inspectors also determined that the licensee had begun to implement limited apparent cause evaluations to supplement root cause and full scope apparent cause evaluations. This new category resulted in an overall increase in the total number of CAQ-related condition reports that required more thorough evaluations.

3.3 Inadequate Corrective Action Effectiveness Reviews

a. Inspection Scope

The inspectors reviewed condition reports that documented examples where corrective action effectiveness reviews had identified ineffective corrective actions and determined whether these condition reports were adequately addressed. The following specific condition reports were reviewed:

- CR 05-04958, “SCAQ Preventive Corrective Action Closed Improperly”
- CR 02-02698, “Error in Calculation of Linear Heat Generation (Thermal Limit MFLPD [Maximum Fraction of Limiting Power Density])”

b. Observations and Findings

No findings of significance were identified. The following issues that met the definition in IMC 0612 as being minor in nature were identified:

- CR 05-04958 was generated to identify that corrective actions had been implemented that were different than those prescribed to address CR 05-00356, “Interim Effectiveness Review CR 03-02086 Identifies Deficient Corrective Actions.” Actions planned to address CR 05-04958 included a determination of whether the corrective actions that had been implemented were equivalent to those that had been prescribed and a determination of the basis for the implementation of the alternative corrective actions without the required approval of the Perry Site Vice President. During the review of this issue, the inspectors determined that although the resolution of CR 05-04958 provided a detailed description of the basis for the implementation of the alternative corrective actions, the authorization of the alternative corrective actions was not addressed. Licensee personnel generated CR 06-9871, “Incomplete Corrective Actions for SCAQ CA/PR 03-03086-18,” to enter this issue into the corrective action program. During the review, the inspectors also identified that the word “intent” as was used in guidance for the identification of alternative corrective actions had not been defined. Licensee personnel generated CR 06-9994, “Clarification of NOP-LP-2001 Guidance Recommended,” to enter this issue into the corrective action program.
- CR 02-02698 was generated to identify an error in the 3DMonitor reactor core software that was introduced during a software upgrade installation activity. The inspectors identified that the documentation of the resolution of CR 02-02698 was insufficient to be a “stand alone” document.

.4 Review of Non-Cited Violations Identified in NRC Inspection Reports

a. Inspection Scope

The inspectors reviewed condition reports and corrective action program closure documentation associated with NCVs identified in NRC inspection reports dated after July 1, 2005, and determined whether these issues were effectively addressed.

b. Observations and Findings

No findings of significance were identified and the inspectors determined that the NCVs reviewed were adequately addressed. The inspectors also reviewed the condition report database to identify any repeat occurrences of the issues described in the NCVs. None were identified.

Although the inspectors were able to verify that corrective actions addressed identified causes, on occasion, the condition report documentation was not “stand alone.”

3.5 Review of 10 CFR 50.72 Event Reports and Actual Events Involving ERO Callout

a. Inspection Scope

The inspectors reviewed condition reports and corrective action closure documentation associated with all 10 CFR 50.72 event reports, including events involving the callout of the Emergency Response Organization (ERO) that occurred after January 1, 2006, and determined whether these issues were effectively addressed.

The inspectors reviewed condition reports associated with the following 10 CFR 50.72 event reports:

NRC Event Number 42272, dated January 18, 2006
NRC Event Number 42329, dated February 10, 2006
NRC Event Number 42330, dated February 11, 2006
NRC Event Number 42476, dated April 5, 2006
NRC Event Number 42552, dated May 4, 2006
NRC Event Number 42656, dated June 20, 2006
NRC Event Number 42677, dated June 30, 2006
NRC Event Number 42693, dated July 8, 2006
NRC Event Number 42854, dated September 21, 2006

b. Observations and Findings

No findings of significance were identified. The inspectors determined that the issues described in the notifications were accurately captured by the licensee’s corrective action program and that identified corrective actions were appropriate to address the root causes and had been adequately implemented.

3.6 Review of Corrective Action Program Action Item Implementation Inspection Issues

a. Inspection Scope

The inspectors reviewed condition reports and closure documentation to address the observations identified during the Corrective Action Program Action Item Implementation Inspection and documented in NRC Inspection Report 05000440/2006008, and determined whether these observations were adequately addressed. In particular, the inspectors reviewed condition reports and corrective action closure documentation associated with Detailed Action and Monitoring Plan (DAMP) Action Items D.9.2, I.3.5, I.4.2, and D1.6 that were determined to be insufficiently implemented for closure. The inspectors also reviewed the licensee's corrective actions to address CR 06-00787, "Inconsistencies With GAP Closure Plans for Red/Yellow Corrective Action Program KPIs."

b. Observations and Findings

No findings of significance were identified. The following issues that met the definition in IMC 0612 as being minor in nature were identified:

DAMP Action Item D.9.2

DAMP Action Item D.9.2: "Develop a method to assign clear, single point ownership of root cause CRs, from CR investigation through CA implementation/effectiveness review completion for each root cause CR (04-02468-69)."

Inspection Observation: Inspection Report 05000440/2006008 documented that CR 04-02468 had been closed as an "intervention action" and a method to assign clear, single point ownership had not been developed.

Resolution: To address this issue, licensee personnel revised NOBP-Site-0046, "Corrective Action Program Implementation Expectations," to prescribe a single point of contact for root cause evaluations and designate an individual to follow the process from the evaluation through the effectiveness review. The inspectors concluded that this issue had been satisfactorily addressed.

DAMP Action Item I.3.5

DAMP Action Item I.3.5: "Revise procedure NOBP-LP-2007, "Condition Report Process Effectiveness Review," to include specific guidance for performing early effectiveness reviews (i.e. based on negative trends) and to include requirements for evaluation when actions taken were determined to be ineffective."

Inspection Observation: Inspection Report 05000440/2006008 documented that NOBP-LP-2007, as revised, replaced the nominal 6 month guideline for performing effectiveness reviews with an evaluation of corrective action effectiveness at the earliest practical opportunity. In addition, the revised procedure prescribed that a corrective action effectiveness review be performed following a challenge to a system, component,

or process, sufficient to evaluate whether the corrective actions were effective. However, IR 05000440/2006008 also documented that the procedure failed to address the performance of an early effectiveness review based on a negative trend. Licensee personnel generated CR 06-0080, "DAMP Items I.3.5 and I.8.4 Incomplete," to enter this issue into the corrective action program.

Resolution: To address this issue, licensee personnel removed the guidance from Item I.3.5 to perform an effectiveness review based upon a negative trend. The inspectors agreed that this would not impact equipment failures since a single repeat failure would indicate that corrective actions had not been effective. However, the inspectors questioned whether the identification of a "negative trend" in areas such as human performance should trigger an early effectiveness review. Licensee personnel generated CR 06-10137, "Non-Utilization of Negative Trends as an Element of Effect," to enter this issue into the corrective action program. Through additional followup discussions, inspectors determined that licensee personnel had generated a Document Change Request to revise applicable procedures to prescribe the identification of negative trends associated with pending effectiveness reviews. Based upon the licensee's completed and planned actions, the inspectors concluded that this issue had been satisfactorily addressed.

DAMP Action Item I.4.2

DAMP Action Item I.4.2: "Strengthen the root cause investigators training plan and qualification requirements (JFG) [Job Familiarization Guidelines]."

Inspection Observation: Inspection Report 05000440/2006008 documented that the actions implemented to address DAMP Action Item I.4.2 had not strengthened the root cause investigators training plan and qualification requirements.

Resolution: Licensee personnel revised the training program for root cause evaluators. The inspectors determined that these revisions strengthened the root cause evaluators training plan and qualification requirements. The inspectors concluded that this issue had been satisfactorily addressed.

DAMP Action Item I.1.6

DAMP Action Item I.1.6: "Publicize CAP [Corrective Action Program] 'success' stories in the FENOC fleet newsletter."

Inspection Observation: Inspection Report 05000440/2006008 documented that the only CAP success story that had been published appeared in the November 17, 2005, FENOC fleet newsletter. DAMP Item I.1.6 was closed after that newsletter was published. However, PYBP-PII-0006, "Process Improvement Initiative Process," prescribed DAMP item closure only after several examples of an action involving periodic activities had been accomplished.

Resolution: The inspectors determined that additional success stories were published in the September and October 2006 editions of the FENOC Online publication. In addition, the identification of CAP success stories were added to the Condition Report Analysts' Meeting agenda with recommendations forwarded to the Performance Improvement Unit staff for review. The inspectors concluded that this issue had been satisfactorily addressed.

CR 06-00787

CR 06-00787: "Inconsistencies With GAP Closure Plans for Red/Yellow Corrective Action Program KPIs."

Inspection Observation: The Corrective Action Program Action Item Implementation inspection team reviewed DAMP Action Item I.7.1, "Establish a management review process that routinely monitors the site's and section level CAP performance. Take action to improve performance when expectations are not met and hold the organization accountable for overall CAP effectiveness." Although the overall implementation of DAMP Action Item I.7.1 was determined to be adequate, the team identified that a formal mechanism to address KPI issues within the licensee's corrective action program did not exist. In particular, the team determined that licensee personnel had not developed written guidance that prescribed the generation of a condition report to address declining KPIs, performance gaps between actual and expected performance, the development of action plans to reduce the gap between actual and expected performance, or the tracking of the success of action plans to address identified performance deficiencies. The team concluded that the lack of a formal process to address KPI issues could impact the long-term effectiveness of the actions. Licensee personnel generated CR 06-00787, "Inconsistencies With GAP Closure plans for Red/Yellow CAP KPIs," to enter this issue into the corrective action program.

Resolution: The licensee initially concluded that no actions were required to address this issue because each yellow or red KPI would require a unique response. Subsequently, CR 06-01948, "NRC Inspection Report 05000440/2006008, Lack of Formal Process," was generated to identify that CR 06-00787 had not been properly resolved and to propose additional corrective actions. The inspectors determined that the licensee's actions to address CR 06-01948 were adequate and the licensee had satisfactorily addressed the issue.

3.7 Review of IP 95003 Supplemental Inspection Report Observations

a. Inspection Scope

The inspectors reviewed condition reports and closure documentation to address the observations associated with the corrective action program identified in NRC IP 95003 Supplemental Inspection Report 05000440/2005003 and determined whether these observations were adequately addressed.

b. Observations and Findings

No findings of significance were identified and the inspectors determined that licensee personnel adequately resolved the identified issues, as discussed below.

- IP 95003 Observation: A lack of independence of evaluators existed, which resulted in the same individuals repeatedly reviewing the same issues without independent and separate reviews.

Resolution: The inspectors determined that applicable procedures had been revised to address independent reviews. In addition, through a review of root cause evaluations associated with SCAQs, the inspectors determined that in many cases multi-disciplinary teams were used to conduct evaluations, which resulted in a heightened level of independence. The inspectors concluded that this issue had been satisfactorily addressed.

- IP 95003 Observation: A high threshold for classifying deficiencies as SCAQs was identified to exist. As a result, few issues received root cause evaluations.

Resolution: The inspectors determined that the threshold for performing root cause evaluations had been significantly reduced. As a result, although the threshold for identifying issues as SCAQs had remained largely unchanged, the number of issues that had been evaluated through the root cause evaluation process had increase significantly. Therefore, the inspectors concluded that this issue had been satisfactorily addressed.

- IP 95003 Observation: Human performance and organizational issues were much less likely than equipment issues to be treated as SCAQs.

Resolution: The inspectors determined that human performance and organizational issues had received increased attention. While few human performance and organizational issues were categorized as SCAQs, licensee personnel consistently used root cause techniques to address the human performance and organizational issues that were identified. This was a significant improvement and the inspectors concluded that this issue had been satisfactorily addressed.

- IP 95003 Observation: No action thresholds were defined in the corrective action program to escalate an issue. Instead, the licensee depended upon the judgment of reviewers and “cognitive trending” rather than operational definitions of “multiple,” “repeat” and “adverse trend” to escalate an issue. The IP 95003 team concluded that this programmatic practice represented a vulnerability in the licensee’s corrective action program for the identification of adverse trends and the performance of root cause evaluations.

Resolution: Through discussions with licensee management, a review of condition reports, and observations of management meetings, the inspectors determined that licensee personnel exhibited a significantly increased sensitivity

to trends and the recurrence of events. The inspectors concluded that this issue had been satisfactorily addressed.

- IP 95003 Observation: Corrective actions were not required to be specifically validated against the root cause. As a result, the effectiveness of corrective actions to address the root cause was not assured.

Resolution: The inspectors determined that following the IP 95003 inspection, the licensee established an expectation that identified root causes be resolved through specific corrective actions, and that this resolution be validated by CARB prior to final approval of the evaluation. The process provided the necessary mechanism for the staff and CARB to clearly understand the relationship between the root cause of a performance deficiency and the corrective action to address the performance deficiency. In addition, licensee personnel modified the effectiveness review process to provide additional assurance that identified corrective actions were appropriate and had adequately addressed the identified issue. The inspectors concluded that this issue had been satisfactorily addressed.

3.8 MAOM, MRB, and CARB Meeting Observations

a. Inspection Scope

The inspectors observed two MAOM [Management Alignment and Ownership Meeting]/MRB [Management Review Board] meetings and two CARB meetings to determine whether identified issues were adequately discussed and whether condition reports were properly categorized.

b. Observations and Findings

No findings of significance were identified. The following issues that met the definition in IMC 0612 as being minor in nature were identified:

- Sponsor Participation During CARB Review of Corrective Action Effectiveness

The inspectors observed that CARB accepted the results of an effectiveness review although the sponsor of the review was not available to present the results. A licensee internal assessment also identified the absence of licensee management at CARB meetings.

- Representation of MRB Members During Meetings

The inspectors observed, during an MRB meeting, that there was no discussion of the categorization of CR 06-9781, "Division 2 Diesel Generator Head Nut Torques," as a full apparent cause evaluation.

In this specific example, the condition report contained very little information and the recommended categorization was approved without discussion.

Subsequently, the inspectors determined that many, but not all, of the MRB members had met the previous evening to discuss the issue and decided, based on information not contained in the condition report, that a full apparent cause evaluation was appropriate. The inspectors concluded that by not involving all MRB members in the specific issue and final decision, the effectiveness of the MRB as a collegial body may have been reduced.

3.9 Oversight Audits, External Audits, and Self-Assessment Reviews

a. Inspection Scope

The IP 95003 inspection team identified that although the audits and assessments performed by the Oversight group, line organizations, and external organizations, identified appropriate issues, actions to address those issues had little substantive impact on performance.

During this inspection, the inspectors reviewed selected audits and assessments performed by the Oversight group, line organizations, and external sources, to determine whether the licensee had demonstrated the capability to identify performance issues before they resulted in actual events or undesired consequences. The inspectors evaluated management support of the audit and assessment process through a review of the staffing of the Oversight organization, management response to audit and assessment findings, and the contributions of the Oversight organization to improvements in licensee performance.

The inspectors also reviewed closure documentation associated with Commitment 2.d/DAMP Action Item 1.10: "Perform a self-assessment that evaluates the overall health of the CAP [Corrective Action Program], including an aggregate assessment of key performance indicator trends. This review is to assess whether progress had been made in CAP performance." The inspectors determined whether this Commitment/DAMP Action Item had been adequately implemented.

b. Observations and Findings

Self-Assessments and Audits of Site Organizations

No findings of significance were identified. The following issues that met the definition in IMC 0612 as being minor in nature were identified:

- Trend Identification Through Assessment Reviews

The inspectors determined that a more consistent licensee review of previous assessment results could aid in the identification of adverse performance trends. Although some of the assessments reviewed by the inspectors included this analysis, the practice was inconsistent. For example, although the Perry Plant and Equipment Reliability Engineering Integrated Performance Assessment (IPA) dated November 7, 2006, included a section entitled, "Status of Previous Performance Trends," other IPAs did not include a similar review.

- Assessment Process Formatting Inconsistencies

The inspectors identified that the licensee had not established a standard format for the documentation of IPA results, which could impact the effectiveness of the process. For example, some IPA reports included a section to identify condition reports that were generated as a result of the assessment, although other reports only identified the condition reports that were generated in the body of the report itself. Licensee personnel generated CR 06-10126, "Trending Not Standard Across the Site, Improvement," to enter this issue into the corrective action program.

Self-Assessments and Audits of the Corrective Action Program

No findings of significance were identified. The inspectors determined that audits and assessments of the corrective action program were effective in identifying areas for improvement. Areas identified as needing attention were entered into the licensee's corrective action program and appropriate corrective actions were identified and implemented. The following were examples of issues identified by audits and assessments:

- Weaknesses in Closure Package Documentation: Snapshot Self Assessments SA877PII2006 and SA819PYRC2006
- Weakness in Categorization of Condition Reports: Snapshot Self Assessment FS-SA-06-13
- Shortfalls with the Trending Program: Quarterly Audit Report PY-C-06-03

In all of the cases reviewed by the inspectors, the issues identified were properly entered into the corrective action program, appropriately evaluated, and prescribed adequate corrective actions that were satisfactorily implemented. Subsequent audits and assessments reviewed the effectiveness of these corrective actions.

The inspectors also noted a good practice of using audit and assessment personnel from other FENOC sites and other utilities. This practice provided an opportunity for the licensee to take advantage of operating experience and performance insights from personnel external to Perry.

Review of Commitment 2.d/DAMP Action Item 1.10.

The inspectors reviewed Corrective Action Program Self Assessment SA846PYRC2006, "Corrective Action Program PII Effectiveness," that was conducted from September 11 through September 26, 2006.

No findings of significance were identified. The assessment identified that a number of improvements in the implementation of the corrective action program had been accomplished. The assessment also identified issues similar to those identified by the inspectors during this inspection.

3.10 Employee Concerns Program Review

a. Inspection Scope

The inspectors reviewed the licensee's Employee Concerns Program (ECP) to determine whether licensee personnel were willing to raise safety concerns and whether safety significant concerns entered into the ECP received appropriate attention. In particular, the inspectors reviewed documentation and interviewed individuals to determine whether weaknesses, if any, in the ECP had contributed to previously identified performance deficiencies; whether additional safety issues existed that had not been adequately captured in the licensee's corrective action program; and whether weaknesses, if any, in the ECP had a negative impact on the site's safety conscious work environment (SCWE). In particular, the inspectors reviewed the results of the Perry 2006 SCWE survey and interviewed 24 licensee employees to independently assess the SCWE at Perry. The interviewees were selected from the Outage Management, Technical Services, Operations, Chemistry, Security, Oversight, and Plant Engineering departments because these departments had higher percentages of negative responses to questions in the licensee's 2006 SCWE survey. The interviews were conducted using the guidance provided in Appendix 1 of NRC Inspection Procedure 71152, "Suggested Questions for Use in Discussions with Licensee Individuals Concerning PI&R [Problem Identification and Resolution] Issues." The inspectors also reviewed licensee procedures and policies associated with the SCWE program, the ECP, and the Differing Professional Opinion Program.

b. Observations and Findings

No findings of significance were identified. Based on the interviews, the inspectors concluded that licensee employees were willing to raise concerns without fear of harassment, intimidation, retaliation, or discrimination. Further, licensee staff were aware of the avenues for raising safety concerns, were satisfied that safety concerns are adequately addressed, and believed that licensee management was supportive of the ECP and the SCWE policy. Licensee employees had confidence in the corrective action program and were willing to challenge actions or decisions they believe were unsafe. While apparently not affecting the site's SCWE at this time, the team noted that the topics raised by the interviewees, e.g. human resource management issues such as appraisals, leadership, work and leave schedules, communications, pay, and staffing, could have a negative impact on SCWE if not addressed. The inspectors also concluded that issues identified through the licensee's SCWE survey had been appropriately entered into the corrective action program. The inspectors did not identify any ECP issues that contributed to station performance deficiencies or adversely impacted the establishment of a SCWE. The nuclear safety concerns that had been identified through the ECP were appropriately addressed through the licensee's corrective action program.

The following issues that met the definition in IMC 0612 as being minor in nature were identified:

- Some employees were unaware of the Differing Professional Opinion Program.

- Some employees were unaware of the role of the Safety Conscious Work Environment Review Team.
- Corrective actions to address issues identified following a September 2006 SCWE survey had not yet been established.

3.11 Operating Experience (OE) Program Review

a. Inspection Scope

During the IP 95003 inspection, the team identified that industry operating experience had not been effectively integrated into plant programs.

During this inspection, the inspectors reviewed the licensee's OE program to determine if the actions implemented to improve the OE program had been effective. The inspectors reviewed the operating experience review procedure, program assessments, and the open item backlog. The inspectors also reviewed selected 10 CFR Part 21 reports, NRC Information Notices (INs), and other generic correspondence to determine if the program had adequately assessed the issues for applicability at the site.

b. Observations and Findings

No findings of significance were identified. Based on a review of a sample of operating experience program documents, the inspectors determined that the licensee's OE program adequately assessed potential issues for applicability at the site, and where necessary, appropriate corrective actions were implemented to address those issues. The inspectors did not identify any examples of deficiencies within the OE program that were similar to the OE issues identified during the IP 95003 inspection.

The inspectors determined that the OE program had significantly improved following the IP 95003 inspection. One example that illustrated this improvement was an OE evaluation of IN 2006-01, "Torus Cracking in a BWR Mark I Containment." Rather than categorizing the IN as non-applicable since Perry utilized a Mark III containment, the OE evaluator performed a thorough evaluation of the issue and determined whether there was any information in the IN that could be applied to Perry.

Notwithstanding this overall performance improvement, the inspectors noted some deficiencies in the timeliness of the completion of some OE evaluations and the implementation of the OE program monthly report requirements, both of which were considered to be minor in nature. Subsequently, the inspectors determined that the licensee had previously identified OE evaluation timeliness concerns and had recently implemented corrective actions to address this issue. To address OE program reporting, licensee personnel generated CR 06-09545, "OE Program Compliance Monthly Report Requirements Not Met."

4.0 Corrective Action Program Key Performance Indicators (KPIs)

4.1 Corrective Action Program KPIs - Actions to Address Results

a. Inspection Scope

The inspectors reviewed the results of corrective action program KPIs from their inception in March 2005 up until the most recent available results in October 2006 and determined, based upon the data obtained, whether issues have been identified, when appropriate, and whether appropriate corrective actions have been identified and implemented to address those issues.

b. Observations and Findings

No findings of significance were identified. The inspectors determined that KPI data was routinely reviewed by the licensee's CARB. The inspectors also determined that issues were identified at a low level and appropriate corrective actions were identified and implemented to address the identified deficiencies.

4.2 Review of Condition Reports Associated With Corrective Action Program Issues

a. Inspection Scope

The inspectors reviewed condition reports associated with corrective action program related issues, particularly those that occurred within the past 6 months, and determined whether the frequency and significance of those issues was consistent with KPI data and indicated that the implementation of the corrective action program had improved.

b. Observations and Findings

No findings of significance were identified and the inspectors concluded that corrective action program related issues that were identified in licensee condition reports were also accurately reflected in the licensee's KPIs. The inspectors also determined that the KPI data indicated that the implementation of the corrective action program had improved.

5.0 Corrective Action Program Action Item Effectiveness Assessment

a. Inspection Scope

Based upon the review of licensee actions to address issues in the licensee's program for identifying, assessing, and correcting performance deficiencies, and the review of corrective action program related KPIs, the inspectors completed an overall assessment of the licensee's actions to address the area of corrective action program implementation.

b. Observations and Findings

Based upon a review of the licensee's implementation of the corrective action program during this inspection and a review of KPI results, the inspectors concluded that the licensee's corrective actions have been effective in improving the implementation of the corrective action program.

6.0 Exit Meeting

On December 13, 2006, the inspectors presented the inspection results to Mr. L. William Pearce, Vice President, and other members of his staff, who acknowledged the findings and observations.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

G. Leidich, Chief Nuclear Office, FENOC
D. Pace, Senior Vice President, Fleet Engineering and Services, FENOC
J. Hagan, Chief Operating Officer, FENOC
J. Rinckel, Vice President, Oversight, FENOC
L. Pearce, Vice President, Perry
F. Cayia, Director, Performance Improvement, Perry
G. Halnon, Director, Performance Improvement Initiative, Perry
J. Shaw, Director, Engineering, Perry
M. Wayland, Director, Maintenance, Perry

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed

05000440/2006015-01 NCV Inadequate repairs to outer lower containment airlock

Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

Procedures

PYBP-SITE-0046, Corrective Action Program Implementation Expectations, Revision 6
NOP-LP-2001, Corrective Action Program, Revision 14
NOBP-LP-2011, FENOC Cause Analysis, Revision 6
NOBP-LP-2019, Corrective Action Program Supplemental Expectations and Guidance, Revision 5
NOP-LP-2001, Corrective Action Program, Revision 14
NOP-LP-2004, Internal Assessment Process, Revision 6
NOP-WM-9001, FIN [Fix-It-Now]/Minor/Toolpouch Maintenance Processes, Revision 2
NOP-WM-4006, Conduct of Maintenance, Revision 1
NOP-LP-2100, Operating Experience Program, Revision 1
PYBP-SITE-045, Initial Screening Committee
SOI-E22A, High Pressure Core Spray System, Revision 18

Condition Reports (CRs)

CR 05-00094; Reactor Scram Investigation; dated January 6, 2005
CR 05-00095; Motor Feed Pump Breaker Failure to Charge; dated January 6, 2006
CR 05-01676; As Found Condition of 1P45C0001A (ESW A); dated March 2, 2005
CR 05-02063; Control Rod Withdraw Error; dated March 10, 2005
CR 05-03986; Corrective Action Effectiveness Rated as Ineffective (Red); dated March 3, 2005
CR 05-05260; Closed Cooling Chemistry Out of Administrative Specification; dated July 8, 2005
CR 05-06653; Airlock Declared Operable Without Performing Retest as Written; dated September 12, 2005
CR 05-06672; Degraded HPCS [High Pressure Core Spray] ESW [Emergency Service Water] Keepfill Pressure Indication; dated September 16, 2005
CR 05-07873; Adverse Trend EDG [Emergency Diesel Generator] Exhaust Modification (PYC-C-05-04); dated February 13, 2006
CR 06-00238; Division 1 Remote Shutdown Panel Internal Wiring; dated January 17, 2006
CR 06-00422; Containment Pool Swell Region Potential Reportability Finding; dated January 25, 2006
CR 06-00670; Fire in Control Complex Due to CC [Control Complex] Miscellaneous Ventilation Fan 2B; dated February 11, 2006
CR 06-01134; Discovered Deviation From Security Working Hour Rules; dated March 9, 2006
CR 06-01477; Tritium Contamination Found in Liquid Grab Sample from Plant Underdrain System; dated March 28, 2006
CR 06-01930; Additional Fire Protection Evaluation Needed for EDG Circuit; dated May 2, 2006
CR 06-02024; B Reactor Recirculation HPU [Hydraulic Power Unit] Low Tank Level; dated May 8, 2006

CR 06-02974; Oil Container in Plant Labeled as Two Different Oils; dated July 4, 2006
CR 06-03047; MEOD [Maximum Extended Operating Domain] Boundary Line Exceeded During Power Ascension on July 9; dated July 10, 2006
CR 06-03505; Pipe Cracks and Resultant Flood 620'-6" Control Complex; dated August 3, 2006
CR 06-03799; Fuel Preconditioning Issues Associated With the September 30 Sequence Exchange; dated August 21, 2006
CR 06-00296; NRC CDBI [Component Design Bases Inspection] Issue with Full Qualification of HPCS; dated January 19, 2006
CR 06-00318; RCIC [Reactor Core Isolation Cooling] Flow Controller Did Not Control in Automatic; dated January 20, 2006
CR 06-00352; LPCS [Low Pressure Core Spray] Suction Valve Fuse Blown While Opening; dated January 24, 2006
CR 06-00359; LPCS Suppression Pool Suction Valve Undersized Fuses; dated January 24, 2006
CR 06-00460; Calculation E21-014, Revision 3 has an Apparent Error in its Methodology; dated January 31, 2006
CR 06-00815; NRC ID - CDBI, Maximum Drywell Temperature Affects ADS [Automatic Depressurization System] Accumulators Pressure; dated February 16, 2006
CR 06-00831; PCIV [Primary Containment Isolation Valve] 1G33F0054 Blown Control Power Fuse; dated February 19, 2006
CR 06-02000; Performance Indicator Unavailability (MSPI) [Mitigating Systems Performance Index]; dated May 4, 2006
CR 06-02028; Missed GL [Generic Letter] 88-01 Category-C (Unflawed and Address Improved) Weld Examinations; dated May 8, 2006
CR 06-02029; Missed GL 88-01 Category-E (Flawed and Stress Improved) Weld Examination; dated May 8, 2006
CR 06-02681; Lower Containment Outer Door Unsafe Light Lit; dated June 14, 2006
CR 06-02691; Bent Valve Stem - Lower Containment Airlock; dated June 14, 2006
CR 06-02801; Airlock Lower Inner Door 3-Way Valve Found Not Assembled Correctly; dated June 21, 2006
CR 06-02861; Service Water Pump "C" Line Shaft Bearings As-Found Condition; dated June 26, 2006
CR 06-03002; Semi-Annual Site Common Cause Analysis; dated July 6, 2006
CR 06-03350; MR [Maintenance Rule] Unavailable Hours for ESW Traveling Screen "A"; dated July 26, 2006
CR 06-03559; SW [Service Water] Pump "C" Seal Flow Rotometer Not Responding to Flow Adjustments; dated August 7, 2006
CR 06-03650; CNRB [Company Nuclear Review Board] Identified Concerns with CR 06-00859; dated August 10, 2006
CR 06-03755; Increased Number of Vortex Events, Most Associated with APRM [Average Power Range Monitor] "G"; dated August 17, 2006
CR 06-04006 Lower Airlock Door Inoperable; dated September 4, 2006
CR 05-06747; 8-Hour and 24-Hour Pressure Drop Test Failed Acceptance Criteria; dated September 20, 2005
CR 06-08015; Control Rod Map in Reactivity Plan Incorrect; dated October 14, 2006
CR 06-09889; Corrective Actions Lacking Clarity; dated November 13, 2006 (NRC-Identified)
CR 06-09958; Potential 10 CFR [Part] 21 Issue With Electrical Relays; dated November 14, 2006 (NRC-Identified)

CR 06-09966; Timely Escalation of Potentially Significant or Important Issues; dated November 16, 2006
CR 05-00356; Interim Effectiveness Review CR 03-02086 Identifies Deficient Corrective Actions; dated January 14, 2005
CR 02-02698; Error in Calculation of Linear Heat Generation (Thermal Limit MFLPO [Maximum Fraction of Limiting Power Density])
CR 05-04958; SCAQ Preventive Corrective Action Closed Improperly; dated June 22, 2005
CR 05-07498; Out of Limit Reactor Water Silica Not Documented via Condition Report per Rec-0104; dated November 8, 2005
CR 05-06401; CR 05-01264 Effectiveness Review - Ineffective Corrective Actions; dated September 1, 2005
CR 05-07678; Indeterminate Effectiveness Review for CR 04-01707; dated November 18, 2005
CR 06-01541; Seven (7) Overdue PMs [Preventative Maintenance Activities]; dated April 4, 2006
CR 06-02705; Cognitive Trend - PM's Going Over the PM Late Date Without a Deferral; dated June 14, 2006
CR 06-00659; 10 CFR Part 21 Issued by Raychem Against Expanded Use of WCSF-300 Tubing; dated February 6, 2006
CR 05-08037; Operating Experience Program - SAP [Systems Approach to Training] Transition Change Management Inadequacy; dated December 14, 2005
CR 06-01358; 10 CFR Part 21 Issued Against Rosemount 1153 Pressure Transmitters; dated March 22, 2006
CR 06-02851; Inadequate Operating Experience Evaluation Timeliness; dated June 26, 2006
CR 06-06783; Improvement Required in Monitoring of OE [Operating Experience] Process Implementation; dated September 25, 2006
CR 06-09545; NRC CAP Effectiveness Inspection - OE Program Compliance - Monthly Report Requirements Not Met; dated November 7, 2006
CR 05-00792; CAP Process Deficiencies Identified at 95003 Inspection Debrief; dated January 28, 2005
CR 05-02725; Substantive Cross-cutting Issue, Problem Identification and Resolution; dated March 26, 2005
CR 05-02855; Dual Concurrent verification instead of independent verification; dated March 30, 2005
CR 05-05815; AFI-2; Self-Assessment SA 761; Evaluation and Resolution of Problems; dated August 3, 2005
CR 05-05817; AFI-4, Self-Assessment SA 761, Trending; dated August 3, 2005
CR 06-01953; Report Identified a Need for Guidance for Early Effectiveness Reviews; dated May 3, 2006
CR 06-00238; Plant Wiring Incorrect in 1C61P001, Remote Shutdown Panel; dated January 17, 2006
CR 06-00650; ONI [Off-Normal Instruction] Entry for Chemical Spill Outside Water Treatment; dated February 10, 2006
CR 06-00670; Fire in Control Complex Due to CC Miscellaneous Ventilation Fan 2B; dated February 11, 2006
CR 06-01561; Event Notification Submitted to NRC for Tritium Issue; dated April 5, 2006
CR 06-01930; Additional Fire Protection Evaluation Needed for EDG Circuit; dated May 2, 2006
CR 06-02781; Earthquake Occurrence at PNPP [Perry Nuclear Power Plant], dated June 6, 2006

CR 06-02941; Offsite Report of Non-Credible Threat; dated June 30, 2006
CR 06-03026; Notification of NPDES Exceedance by Beta Drive for Neutral Basin A Suspended Solids; dated June 29, 2006
CR 06-06370; In Single Loop Operations, OPRM [Oscillating Power Range Monitor] Enable Region Flow Setpoint May be Non-Conservative; dated September 14, 2006
CR 06-09545; OE Program Compliance - Monthly Report Requirements Not Met
CR 06-09784; CARB Approval of an Effectiveness Review Without the Owner Present
CR 06-09781; Division 2 Diesel Generator Head Nut Torques
CR 06-09857; Guidance of NOP-LP-2001 Not Followed Consistently
CR 06-09889; Corrective Actions Lacking Clarity
CR 06-09958; Potential 10 CFR Part 21 Issue With Electrical Relays
CR 06-09994; Clarification of NOP-LP-2001 Guidance Recommended
CR 06-09996; CA Plan Not Final Over 3 Months After Investigation Complete
CR 06-09998; Improvement to NOBP-LP-2007 Guidance Regarding Ineffective CA
CR 06-10000; Poor Problem Statement, Description and Categorization of CR 06-9781
CR 06-10021; CR Investigation and CA Completion Documentation Not Clear
CR 06-10126; Trending Not Standard Across the Site, Improvement
CR 06-10130; Work Performed on Containment Airlock Without Adequate Work
CR 06-10137; Non-Utilization of Negative Trends as an Element of Effect
CR 05-00111; Unresolved Item Tracking: Safety System Unavailability for RHR [Residual Heat Removal] PI [Performance Indicator]; dated January 6, 2005
CR 05-00222; Individual Was in a Posted High Radiation Area on the Incorrect RWP [Radiation Work Permit]; dated January 10, 2005
CR 05-01136; LCO [Limiting Condition for Operation] 3.0.3 Entry Due to Inoperable Testable Relief Devices on Diesel Generators; dated February 17, 2005
CR 05-01676; As Found Condition of 1P45C0001A; dated March 2, 2005
CR 05-01959; Two Radworkers Entered a High Radiation Area on a Low Risk RWP; dated March 8, 2005
CR 05-02534; PAP-0204 Housekeeping / Cleanliness Control Program; dated March 21, 2005
CR 05-02617; Disassembly/Reassembly of the Division I and II Emergency Service Water Pumps; dated March 23, 2005
CR 05-02921; Inadvertent Entry Into Locked High Radiation Area; dated March 31, 2005
CR 05-03026; Unexpected Results During F1F14 Outage Preparations; dated April 4, 2006
CR 05-03054; Unexpected Valve Strokes During Performance of SVI-R43-T1338; dated April 5, 2005
CR 05-03798; Inappropriate Corrective Action 04-05538-03 Closure; dated April 26, 2005
CR 05-03800; 1E12C0003 Discharge Flange Inadequate Thread Engagement; dated April 26, 2005
CR 05-04335; F1F14 Outage Preps Impacted Inservice DHR [Decay Heat Removal] System; dated May 17, 2005
CR 05-04112; Temporary Test Gauges Left Installed After Troubleshooting of G33F052B; dated May 6, 2005
CR 05-04585; RHR Unavailability NRC Performance Indicator may Potentially Become White; dated May 24, 2005
CR 05-05898; NRC Observation of Storage Cage in the Intermediate Building, 574' Elevation; dated July 22, 2005
CR 05-05938; Untimely Resolution of a Condition Adverse to Quality Issue; dated August 9, 2005

CR 05-06016; Organizational Ineffectiveness Results in RWCU [Reactor Water Cleanup] Isolation; dated August 13, 2005
CR 05-06532; NRC ID Concerns with Investigation of CR 05-5024; dated September 9, 2005
CR 05-07371; ECC [Emergency Closed Cooling] Pump 1P42C0001B Outboard Pump Bearing Oil Leak; dated October 29, 2005
CR 05-07399; Issue Identified on New Style Trico Oilers; dated November 1, 2005
CR 05-07683; TBCCW [Turbine Building Closed Cooling Water] Pump A - Failed PMT [Post-Maintenance Testing]/Repeat Maintenance; dated November 19, 2005
CR 05-07688; Adverse Trend on Installation of Trico Oilers; dated November 20, 2005
CR 06-02415; PY-C-06-02 Untimely Implementation of Corrective Action; dated May 30, 2006
CR 06-03103; PY-C-06-02, CAP Identification and Classification Marginally Effective (Yellow); dated July 13, 2006
CR 06-06184; PY-C-06-03 CAP Reconciliation Rated Yellow/Marginally Effective at All 3 Sites; dated September 11, 2006
CR 06-06197; PY-C-06-03 Shortfalls Exist with the FENOC CAP Trending Program; dated September 11, 2006
CR 06-06198; PY-C-06-03 2 Year Reconciliation Rating of CAP Evaluation is Yellow; dated September 11, 2006
CR 06-02389; SA 877PII2006 Area for Improvement (AFI); dated May 26, 2006
CR 06-02526; Negative Trend of Overdue CR/CAs; dated June 5, 2006
CR 06-02003; CR Evaluations Approved with Comment by CARB Which May Have Been Rejectable; dated May 5, 2006
CR 06-03004; Unclear Guidance for Quarantining Parts With a Potential 10 CFR 21 Consequence; dated June 21, 2006
CR 06-03014; PY Does Not Always Conservatively Categorize CRs Based on Potential Consequences; dated July 7, 2006
CR 06-00767; DAMP Item D.9.2/I.9.2.1 - Corrective Action Alternately Closed Without Proper Approval; dated February 15, 2006
CR 06-01953; DAMP Item I.3.5 - RPT [Radiation Protection Technician] Identified a Need for Guidance for Early Effectiveness Reviews; dated May 3, 2006
CR 06-01954; DAMP Item I.4.2/4.2.1 - IR [Inspection Report] 05000440/2006008 Review of PII Item I.4.2; dated May 3, 2006
CR 06-00630; DAMP Item I.4.2/4.2.1 - No Process Exists to Prevent Inadvertent Changes to Closed PII Actions; dated February 9, 2006
CR 06-00784; DAMP Item I.4.2/4.2.1 - Issues with Implementation of Revised CAP Training; dated February 16, 2006
CR 06-01451; DAMP Item I.1.6 - Re-open PII Action CAP I.1.6
CR 06-00787; NRC ID: Inconsistencies with Gap Closure Plans for Red and Yellow CAP KPIs; Dated February 16, 2006
CR 06-01948; NRC Inspection Report 05000440/2006008, Lack of Formal Process; dated May 5, 2006
CR 06 08215; Additional Information Required to Support NRC CAP Inspection Request; dated October 16, 2006
CA 05-07223-07; PII Action Plan Documentation; dated October 20, 2005
CA 05-07223-10; PII Action Plan Documentation; dated October 20, 2005
CA 05-07223-14; PII Action Plan Documentation; dated October 20, 2005
CA 05-07223-15; PII Action Plan Documentation; dated October 20, 2005

Oversight Audits and Assessments, External Assessments, and Self-Assessments

Perry Regulatory Compliance and Emergency Response Section; January through June 2006
Perry Protection Section, January through June 2006
Perry Plant and Equipment Reliability Engineering; dated November 7, 2006
Perry Nuclear Maintenance; January through June 2006
PY-C-06-03; Perry Nuclear Oversight Assessment Quarterly Audit Report; dated September 15, 2006
FS-SA-06-19; FENOC Fleet Procedure Process Review Snapshot Assessment; dated September 29, 2006
SA 877PII2006; PII [Performance Improvement Initiative] CAP [Corrective Action Program] Effectiveness; dated May 26, 2006
SA 819-PYRC-2006; NRC CAL [Confirmatory Action Letter] CAP Commitment Review; dated February 3, 2006
SA 829-PYPR-2006; CAP Participant Qualifications; dated March 3, 2006
SA FS-SA-06-13; Categorization of CRs; dated June 29, 2006
SA 846PYRC2006; Self Assessment Report, Corrective Action Program, September 11-26, 2006
SA 846PYRC2006; Self Assessment, CAP PII Effectiveness; dated October 17, 2006
SAP Order 200207434-013; dated August 16, 2006
IPA822PYRC2006; dated January 31, 2006

Work Orders (WOs)

WO 200214487; Troubleshoot and Correct Cause of "Unsafe" Indication Light; dated June 14, 2006
WO 200226158; Perform Troubleshooting of Airlock; dated September 6, 2006
WO 200214566; Rebuild Ball Valve; dated September 19, 2006
WO 200036857; Perform MCC [Motor Control Center] Bucket Maintenance; dated January 23, 2006

Quality Field Observations

PY120061928; First Quarter 2006 CRs and CAs [Corrective Actions]; dated March 30, 2006
PY120061941; 50.59 Data Base Conversion; dated February 24, 2006
PY120061953; CAP Trending/Performance Monitoring; dated April 19, 2006
PY120061968; Remote Shutdown Panel Wiring Deficiencies; dated January 19, 2006
PY120061983; CAP PII and Quarterly Trends; dated May 1, 2006
PY120062017; Review of PII Effectiveness, Work Management During First Quarter 2006; dated March 24, 2006
PY120062029; Tracking of Follow-Up CRs and CAs for Second Quarter Assessment; dated April 1, 2006
PY120062054; Human Performance Improvement Initiatives; dated April 3, 2006
PY120062102; CARB [Corrective Action Review Board] Meeting of July 27, 2006; dated July 27, 2006
PY120062098; Corrective Action Program Reconciliation; dated July 1, 2006
PY120062100; Corrective Action Program Evaluation; dated August 10, 2006
PY120062132; PY-PA-06-03 Self-Assessment Debrief Meetings; dated September 22, 2006

PY120062110; FENOC Oversight Quality Field Observation for PY-C-06-03 ASME and NR&R Code Work; dated September 22, 2006

SAP Notifications

600242501; Missing Taper Pins in Fisher Butterfly Valve
600261817; IN [Information Notice] 05-25 - Reactor Trip Due to Tin Whiskers; dated December 15, 2005
600270902; New Fuel Stainless Steel Shipping Container Bolting Requirements
600273642; Molded Case Circuit Breakers Fail; dated January 9, 2006
600275908; Failure of RPS [Reactor Protection System] Reserve Feed VR; dated January 20, 2006
600278169; Loose Bolts on Cribbing on Fuel; dated January 31, 2006
600278214; Torus Cracking in a BWR [Boiling Water Reactor] Mark I Containment; dated January 9, 2006
600283160; MOV [Motor-Operated Valve] Failure Due to Dust; dated February 21, 2006
600283560; EDG Damage Following Maintenance; dated February 23, 2006
600285320; Agastat EGP Relay Frames Energize; dated March 3, 2006
600286122; High Iodine Impacts MCO Analysis; dated March 3, 2006
600289961; Incorrect Channel Fastener Gauge; dated March 24, 2006
600303564; SEN 261 - Low Head Safety Pumps Inoperable; dated May 20, 2006
600310188; Lithium Battery Failure/Fire; dated June 22, 2006
600313480; IN 06-13 - Ground-Water Contamination; dated July 12, 2006
600319858; Service Water Systems OE; dated August 7, 2006
600322722; LOOP [Loss-of-Offsite-Power] and Decay Heat Removal; dated August 23, 2006
600324205; False Indication of Steam Dryer Leak; dated August 31, 2006
600329764; SOER [Significant Operating Experience Report] 96-01 Effectiveness Review; dated September 22, 2006
600333176; TR4-41 Addendum 1 Review of Main Feedwater Events; dated October 6, 2006

Miscellaneous

Monthly Operating Experience Status Report; dated June 2006
Monthly Status Report Condition Reports and Operating Experience; dated September 2006
Perry Nuclear Power Plant Monthly Performance Indicator Report; dated September 2006
2006 FENOC Focused Self-Assessment Log

LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
CA	Corrective Action
CAL	Confirmatory Action Letter
CAP	Corrective Action Program
CAQ	Condition Adverse to Quality
CARB	Corrective Action Review Board
CR	Condition Report
DAMP	Detailed Action and Monitoring Plan
ECP	Employee Concerns Program
EDG	Emergency Diesel Generator
ERO	Emergency Response Organization
FENOC	FirstEnergy Nuclear Operating Company
FIN	Fix-It-Now
GMI	General Mechanical Instruction
IMC	Inspection Manual Chapter
IN	Information Notice
IP	Inspection Procedure
IPA	Integrated Performance Assessment
IR	Inspection Report
JFG	Job Familiarization Guide
KPI	Key Performance Indicators
MAOM	Management Alignment and Ownership Meeting
MEOD	Maximum Extended Operating Domain
MFLPD	Maximum Fraction of Limiting Power Density
MRB	Management Review Board
NCV	Non-Cited Violation
NOBP	Nuclear Operating Business Practice
NOP	Nuclear Operating Procedure
NRC	Nuclear Regulatory Commission
OE	Operating Experience
PCIV	Primary Containment Isolation Valve
PII	Performance Improvement Initiative
PMT	Post Maintenance Test
PNPP	Perry Nuclear Power Plant
PYBP	Perry Business Practice
RCIC	Reactor Core Isolation Cooling
ROP	Reactor Oversight Process
SCAQ	Significant Condition Adverse to Quality
SCWE	Safety Conscious Work Environment
TS	Technical Specification
WO	Work Order

PERRY PERFORMANCE BACKGROUND

As discussed in the Perry Annual Assessment Letter dated March 4, 2004, plant performance was categorized within the Degraded Cornerstone column of the NRC's Action Matrix based on two White findings in the Mitigating Systems cornerstone. An additional White finding in the Mitigating Systems cornerstone was subsequently identified and documented by letter dated March 12, 2004.

The first finding involved the failure of the high pressure core spray (HPCS) pump to start during routine surveillance testing on October 23, 2002. An apparent violation of Technical Specification (TS) 5.4 for an inadequate breaker maintenance procedure was identified in IR 05000440/2003008. This performance issue was characterized as White in the NRC's final significance determination letter dated March 4, 2003. A supplemental inspection was performed in accordance with IP 95001 for the White finding. Significant deficiencies in the licensee's extent of condition evaluation were identified. Inspection Procedure 95001 was subsequently re-performed and the results of that inspection were documented in IR 05000440/2003012, which determined that the extent of condition reviews were adequate.

The second finding involved air binding of the low pressure core spray (LPCS)/residual heat removal (RHR) 'A' waterleg pump on August 14, 2003. A special inspection was performed for this issue and the results were documented in IR 05000440/2003009. An apparent violation of TS 5.4 for an inadequate venting procedure was identified in IR 05000440/2003010. This performance issue was characterized as White in the NRC's final significance determination letter dated March 12, 2004.

The third finding involved the failure of the 'A' Emergency Service Water (ESW) pump, caused by an inadequate maintenance procedure for assembling the pump coupling that contributed to the failure of the pump on September 1, 2003. An apparent violation of TS 5.4 was documented in IR 05000440/2003006. This performance issue was characterized as White in the NRC's final significance determination letter dated January 28, 2004.

As documented in IP 95002 Supplemental Inspection Report 05000440/2004008, dated August 5, 2004, which reviewed the licensee's actions to address these issues, the NRC concluded that the corrective actions to prevent recurrence of a significant condition adverse to quality (SCAQ) were inadequate. Specifically, the same ESW pump coupling that failed on September 1, 2003, failed again on May 21, 2004. This resulted in the ESW pump White finding remaining open.

As a result, Perry entered the Multiple/Repetitive Degraded Cornerstone column for Mitigating Systems in the Reactor Safety strategic performance area for having two White inputs for 5 consecutive quarters. Specifically, for the 3rd quarter of 2004, the waterleg pump finding remained open a 4th quarter while the ESW pump finding was carried open into a 5th quarter as a result of the findings of the IP 95002 supplemental inspection.

PERRY IP 95003 INSPECTION RESULTS

As a result of poor performance, the Nuclear Regulatory Commission (NRC) designated the Perry Nuclear Power Plant (PNPP), owned and operated by FirstEnergy Nuclear Operating Company (FENOC), as a “Multiple/Repetitive Degraded Cornerstone Column” facility in the NRC’s Action Matrix¹ in August 2004. Accordingly, a supplemental inspection was performed in accordance with the guidance in NRC Inspection Manual Chapter (IMC) 0305 and Inspection Procedure (IP) 95003, “Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input.”

In addition, the scope of the IP 95003 inspection included the review of licensee actions to address deficiencies identified during a previous IP 95002 inspection. In particular, the NRC reviewed the licensee’s root cause and corrective actions to address the areas of procedure adequacy, procedure adherence, and training deficiencies identified in the previous IP 95002 inspection; as well as the problem identification, root cause review, and corrective actions to address repetitive emergency service water (ESW) pump coupling failures.

By letter dated September 30, 2004, FENOC advised the NRC that actions were underway to improve plant performance. To facilitate these performance improvements, FENOC developed the Perry Performance Improvement Initiative (PII). As part of the NRC’s IP 95003 inspection, the team conducted a detailed review of the PII.

As documented in IP 95003 Supplemental Inspection Report 05000440/2005003, the NRC determined Perry was being operated safely. The NRC also determined that the programs and processes to identify, evaluate, and correct problems, as well as other programs and processes in the Reactor Safety strategic performance area were adequate. Notwithstanding these overall conclusions, the NRC determined that the performance deficiencies that occurred prior to and during the inspection were often the result of inadequate implementation of the corrective action program (CAP) and human performance errors.

The team identified that a number of factors contributed to CAP problems. A lack of rigor in the evaluation of problems was a major contributor to the ineffective corrective actions. For example, in the engineering area, when problems were identified, a lack of technical rigor in the evaluation of those problems at times resulted in an incorrect conclusion, which in turn affected the ability to establish appropriate corrective actions. The team also determined that corrective actions were often narrowly focused. In many cases a single barrier was established to prevent a problem from recurring. However, other barriers were also available that, if identified and implemented, would have provided a defense-in-depth against the recurrence of problems. The team also identified that problems were not always appropriately prioritized, which led to the untimely implementation of corrective actions.

¹The NRC’s Action Matrix is described in Inspection Manual Chapter 0305, “Operating Reactor Assessment Program.”

A number of programmatic issues were identified that have resulted in the observed CAP weaknesses. For example, the team identified a relatively high threshold for classifying deficiencies for root cause analysis. As a result, few issues were reviewed in detail. In addition, for the problems that were identified that required a root cause evaluation, the team found that the qualification requirements for root cause evaluators were limited and multi-disciplinary assessment teams were not required. The team also identified that a lack of independence of evaluators existed. This resulted in the same individuals repeatedly reviewing the same issues without independent and separate review. In addition, the team identified weaknesses in the trending of problems, which has hindered the ability to correct problems at an early stage before they become more significant issues. Finally, the team determined that a lack of adequate effectiveness reviews was a barrier to the identification of problems with corrective actions that had been implemented.

In the area of human performance, the team determined that a number of self-revealed findings relating to procedure adherence occurred that had a strong human performance contribution. These findings were derived from events that resulted in an unplanned engineered safety feature actuation, a loss of shutdown cooling, an unplanned partial drain down of the suppression pool, an inadvertent operation of a control rod (a reactivity event), and other configuration control errors. The team reviewed the events that occurred during the inspection and identified that the procedure adherence problems had a number of common characteristics. In a number of cases, personnel failed to properly focus on the task at hand. Although pre-job briefings were held prior to many events, and procedures were adequate to accomplish the intended activity, personnel failed to sufficiently focus on the individual procedure step(s) being accomplished and performed an action outside of that prescribed by the procedure. In some cases, the team determined that a lack of a questioning attitude contributed to the procedure problems that occurred. Although information was available to personnel that, if fully considered, could have prevented the procedure adherence issues that occurred, that information was not sought out or was not questioned. The presence of supervisors with the necessary standards to foster good procedure adherence could have acted as a significant barrier to prevent some of the problems that occurred. However, adequate supervisory oversight was not always available or used. Further, the team identified that available tools for assessing human and organizational performance had not been effectively used.

In the area of design, the IP 95003 inspection team concluded that the systems, as designed, built, and modified, were operable and that the design and licensing basis of the systems were sufficiently understood. Notwithstanding the overall acceptability of performance in the engineering area, the team identified common characteristics in a number of problems identified during the inspection. These characteristics included a lack of technical rigor in engineering products that resulted in an incorrect conclusion. Also, there appeared to be a lack of questioning by the licensee staff of some off-normal conditions. Finally, weaknesses in the communications between engineering and other organizations such as operations and maintenance sometimes hindered the resolution of problems.

In the area of procedure adequacy, the team determined that the licensee's procedures to safely control the design, maintenance, and operation of the plant were adequate, but warranted continued management focus and resource support. In particular, process-related vulnerabilities in areas such as periodic plant procedure reviews, procedure revisions, and use classifications were identified by the team.

In the area of equipment performance, the team acknowledged that the licensee had completed numerous recent plant modifications to improve equipment performance. In addition, improved engineering support and management oversight of equipment performance were noted. Notwithstanding the above, the team identified numerous examples that indicated that the resolution of degraded equipment problems and implementation of the CAP continued to be a challenge to the organization.

In the area of configuration control, the team identified numerous examples that indicated the resolution of configuration control issues and implementation of the CAP continued to be a challenge to the organization. The team agreed with the licensee's assessment that continuing configuration control problems were primarily the result of inappropriate implementation of procedural requirements rather than the result of configuration management procedural shortcomings. However, given the errors associated with equipment alignment, as well as multiple errors associated with maintenance configuration control such as scaffolding erection, the team concluded that adequate evaluations of the root causes of configuration control errors had not been performed. The team also concluded that the licensee lacked rigor in its efforts to resolve latent configuration control issues. Several licensee-identified issues have not been corrected, and contributed to configuration control shortcomings.

In addition, in the area of emergency preparedness, the team determined that there were some performance deficiencies associated with the licensee's implementation of the Emergency Plan. A number of findings were identified in which changes to the Emergency Plan or Emergency Action Levels were made without required prior NRC approval. In addition, the results of the augmentation drill where personnel were called to report to the facility for a simulated emergency were unsatisfactory.

With regard to the NRC's review of issues associated with the previous IP 95002 inspection, the NRC determined that actions to address procedure adequacy and ESW pump failures was still in progress at the end of the IP 95003 inspection. In particular, the team identified that one of the licensee's corrective actions to address the verification of the quality of ESW pump work was inadequate. In addition, in light of the continuing problems in human performance and the impact on procedure adherence, the team concluded that actions to address procedure adherence had not been fully effective. Finally, actions to address training were also still in progress at the end of the inspection. In this case, the licensee's corrective actions to address this issue had not been timely and at the conclusion of the IP 95003 inspection, had not yet been implemented. As a result, the NRC concluded that the open White findings associated with the IP 95002 inspection would continue to remain open pending additional licensee actions and the NRC's review of those actions.

In the assessment of the licensee's performance improvements planned and implemented through the Perry PII, the team determined that the Perry PII had a broad scope and addressed many important performance areas. The IP 95003 inspection team also observed that,

although substantially completed, the PII had not resulted in significant improvement in plant performance in several areas. There were a number of reasons identified as why this occurred, one being that the PII was largely a discovery activity, and as such, many elements of the PII did not directly support improving plant performance. Instead, the problems identified through the PII reviews were entered into the CAP and the proper resolution of these problems depended upon the proper implementation of the CAP. During the IP 95003 inspection, the NRC identified that in some cases the CAP had not been implemented adequately to address the concerns identified during PII reviews. The team identified that although many PII actions had been completed, some of the more significant assessments, such as in the area of human performance, were still in progress at the end of the inspection. Overall, based on the factors discussed above, the NRC was unable to draw any definitive conclusions regarding the overall effectiveness of the Perry PII. As a result, further reviews were deemed to be necessary to determine whether the PII was sufficient to address and resolve the specific issues identified.

SUMMARY OF PHASE 2 PII INITIATIVES

To correct the identified declining trends in performance at Perry, the Perry Phase 2 PII was structured around the following six key improvement initiatives:

Corrective Action Program Implementation Improvement

As described in the Phase 2 PII, the Corrective Action Program Implementation Improvement initiative was designed to drive ownership and accountability for the corrective action program (CAP) deep into the PNPP organization. The initiative was aimed at driving behavior changes to increase ownership and accountability of the corrective action program to solve plant issues. Key objectives of this initiative included improvement in the following areas:

- ownership and station focus,
- management and oversight of the corrective action program,
- prioritization of issues and resolution activities,
- trending capability,
- backlog management,
- quality of corrective actions and documentation,
- individual accountability, and
- corrective action work assignment and resource utilization.

Excellence in Human Performance

As described in the Phase 2 PII, the Excellence in Human Performance initiative was designed to clarify standards and expectations for human performance, establish line ownership and alignment, and strengthen line accountability for human performance. Key objectives of this initiative included improvement in the following areas:

- performance expectations,
- line ownership, alignment, and integration, and
- line accountability of results.

Training to Improve Performance

As described in the Phase 2 PII, the Training to Improve Performance initiative was targeted at improving both PNPP Skills Training and Operator Training Programs to improve plant and personnel performance. Key objectives of this initiative included the following:

- establish training as a dominant tool to improve station performance, and
- develop a comprehensive plan to help line and training managers return the performance of Perry's training programs to a level consistent with current industry standards.

Effective Work Management

As described in the Phase 2 PII, the Effective Work Management initiative was designed to provide a site-wide systematic and focused effort to drive improvements in work management. The initiative was intended to implement improvements in the selection, preparation, and execution of work to achieve excellence in work management. Key objectives of this initiative included the following:

- a long range plan for equipment performance,
- contingency planning guidance and execution,
- strong use of operating experience in work packages,
- improvement in outage preparation and execution, and
- control of contract workers.

Employee Engagement and Job Satisfaction

As described in the Phase 2 PII, the Employee Engagement and Job Satisfaction Initiative was designed to increase employee contribution to PNPP success by creating an environment in which all employees can make a meaningful contribution and feel pride and a sense of accomplishment in their work. Key objectives of this initiative included the following:

- employee involvement in Phase 2 PII activities,
- leadership behaviors and performance management,
- leadership assessment and development, and
- use of overtime.

Operational Focused Organization

As described in the Phase 2 PII, the Operational Focused Organization initiative was designed to improve the operational focus of the PNPP organization to achieve a higher order of safe and reliable operation. Key objectives of this initiative included the following:

- fundamental skills and behaviors required for safe and reliable operation,
- operations-led organization,
- alignment of goals and priorities,
- strong craft ownership and engineering presence, and
- operations resources replenishment planning.