

July 25, 2006

CAL 3-05-001

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
HUMAN PERFORMANCE ACTION ITEM IMPLEMENTATION INSPECTION
NRC INSPECTION REPORT 05000440/2006012

Dear Mr. Pearce:

The purpose of this letter is to provide you with Inspection Report 05000440/2006012, detailing the results of a Confirmatory Action Letter (CAL) followup inspection in the area of Human Performance. You and other members of your staff attended the July 11, 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 July 13, 2006.

As a result of poor performance, the 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 50-440/2005003, the NRC determined Perry was being operated safely. However, the team identified problems similar to those previously identified at your Perry facility, particularly in the area of human performance.

By letters dated August 8, 2005, and August 17, 2005, you responded to the findings and observations detailed in the NRC's IP 95003 supplemental inspection report. As discussed in these letters, the Perry management team reviewed the achievements realized by the Perry 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 human performance issues.

The purpose of this inspection was to review your accomplishment of actions associated with improving human performance. In particular, this inspection focused on determining whether your Commitments associated with the Human Performance area that were identified in your August 8 and 17, 2005, letters that responded to our IP 95003 supplemental inspection report, as well as selected completed actions prescribed in the Perry Phase 1 and Phase 2 Detailed Action and Monitoring Plan to improve human performance, were adequately implemented. A review of the overall effectiveness of these actions toward realizing improvements in the Human Performance area will be conducted at a later date.

Based on the results of this inspection, no findings of significance were identified and the team determined that all four of your Commitments in the Human Performance area were adequately implemented. In particular, the team concluded that the roles and responsibilities of the Site Leadership Team in implementing the human performance program were adequately defined and communicated; that Site Training Advisory Committee meetings have had a strong focus on human performance; that the purpose and key activities of the human performance program have been communicated to site personnel; and that the scope and content of initial and continuing training needs on human performance fundamentals and error prevention tools were identified, and adequate training was provided to the plant staff. The team also determined that all Action Items associated with the Human Performance area that we reviewed were adequately implemented.

Notwithstanding our determination that all Commitments and Action Items reviewed were adequately implemented, some observations regarding your implementation of these actions were identified and are discussed in the attached report. You are requested to respond within 30 days of the date of your receipt of this letter and describe the specific actions that you plan to take to address these observations.

The NRC will continue to provide increased oversight of activities at your Perry Nuclear Power Plant until you have demonstrated that your corrective actions are lasting and effective. 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 Operating Reactor Facilities in a Shutdown Condition with Performance Problems" 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 NRC's document system (ADAMS). ADAMS is 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 05000440/2006012
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
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-440

License No: NPF-58

Report No: 05000440/2006012

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Perry Nuclear Power Plant

Location: 10 Center Road
Perry, Ohio 44081

Dates: June 12 through July 11, 2006

Inspectors: R. Hagar, H.B. Robinson SRI, Region II
M. Franke, Perry SRI, Region III
F. Jaxheimer, Susquehanna RI, Region I
R. Pelton, Operator Licensing and Human
Performance Branch, NRR

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

Enclosure

SUMMARY OF FINDINGS

IR 05000440/2006012; 6/12/2006 - 7/11/2006; Perry Nuclear Power Plant; Confirmatory Action Letter (CAL) Followup Inspection - Human Performance Action Item Implementation Inspection

This report covers a 2-week period of supplemental inspection by resident and headquarters inspectors. No findings of significance were identified during this inspection. 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.

E. NRC-Identified and Self-Revealed Findings

None.

B. Licensee-Identified Violations

None.

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 50-440/2005003, the NRC determined Perry was being operated safely.

Notwithstanding this overall conclusion, the NRC determined that the performance problems that occurred were often the result of human performance errors. In particular, the IP 95003 inspection team determined that a number of self-revealed findings related to procedure adherence had a strong human performance contribution. The IP 95003 inspection team reviewed the events that occurred during the IP 95003 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 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. 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 human performance.

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, 2005, letters also included actions planned to address the NRC's findings and observations detailed in the IP 95003 supplemental inspection report. Attachment 3, "Actions to Address Key Issues Identified in the IP 95003 Inspection Report," of these letters 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

2.0 Inspection Scope

The purpose of this inspection was to review the licensee's accomplishment of Commitments and Action Items associated with the Human Performance initiative area of the Phase 2 Performance Improvement Initiative.

To accomplish this objective, Commitments and Action Items grouped in the following five areas were reviewed, consistent with Revision 7 of Perry Business Practice (PYBP) PII-002, "Performance Improvement Initiative Detailed Action and Monitoring Plan (DAMP)."

- Set Performance Expectations
- Strengthen Line Ownership, Alignment, and Integration
- Improve Line Accountability For Results
- Address Procedure Use and Adherence
- Confirm Initiative Effectiveness

In addition, the team reviewed Phase 1 PII DAMP Action Items to determine whether these items had been adequately implemented as well as key performance indicators (KPIs) associated with human performance to evaluate the quality of the indicators and overall human performance.

A review of the overall effectiveness of these actions toward realizing improvements in the Human Performance area will be conducted at a later date. However, a “snapshot” review of the interim effectiveness of the implemented initiatives was performed through the observation of maintenance and surveillance activities as well as the observation of routine evolutions in the control room.

3.0 Set Performance Expectations

The following DAMP Action Items in the “Set Performance Expectations” area of PYBP-PII-002, “Performance Improvement Initiative Detailed Action and Monitoring Plan (DAMP),” Revision 7, were reviewed:

- DAMP Item 1.1.1: “Develop and implement a Human Performance policy (NOPL-LP-2008) that aligns with the INPO [Institute for Nuclear Power Operations] Excellence in Human Performance publication, dated September 1997.”
- DAMP Item 1.2.1: “Revise the Human Performance Program business practice (NOBP-LP-2601) to expand upon the roles and responsibilities of key personnel.”
- DAMP Item 1.2.3: “Establish a self-assessment and benchmarking schedule. This action should include industry meetings and non-FENOC plants for benchmarking.”

To accomplish these reviews, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and original and revised procedures. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished.

3.1 DAMP Item 1.1.1

a. Inspection Scope

The team reviewed DAMP Item 1.1.1: “Develop and implement a Human Performance policy (NOPL-LP-2008) that aligns with the INPO Excellence in Human Performance publication, dated September 1997.”

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and original and revised procedures. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team determined whether NOPL-LP-2008 aligned with the INPO performance model and established clear expectations and standards for the Human Performance Program.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee's actions adequately implemented DAMP Item 1.1.1.

The team determined that NOPL-LP-2008, Revision 0, aligned with the human performance model described in INPO's, "Excellence in Human Performance," publication and established clear human performance expectations and standards. In particular, the team identified that the underlying principles described in NOPL-LP-2008 were identical to those in the INPO publication, the discussion of human behavior and performance in NOPL-LP-2008 was identical to the corresponding discussion in the INPO publication, and the policy explicitly referenced the INPO publication.

3.2 DAMP Item 1.2.1

a. Inspection Scope

The team reviewed DAMP Item 1.2.1: "Revise the Human Performance Program business practice (NOBP-LP-2601) to expand upon the roles and responsibilities of key personnel."

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and original and revised procedures. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed the revised NOBP-LP-2601 and determined whether this revised business practice adequately expanded the roles and responsibilities of key personnel such that an improvement to the previous revision was realized.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee's actions adequately implemented DAMP Item 1.2.1.

The team determined that NOBP-LP-2601, "Human Performance Program," Revision 2, was developed to expand upon the roles and responsibilities of key personnel. Positions whose roles and responsibilities were expanded in this revision included Section Managers, Superintendents, Supervisors, the Station Human Performance Advocate, Station Human Performance Section Advocates, and individual contributors. The responsibilities of the General Manager were replaced with expanded

responsibilities of the Director of Site Operations, and the responsibilities of the FENOC Nuclear Human Performance Peer Group were replaced with expanded responsibilities for the Director, Fleet Organizational Effectiveness and the Manager, Fleet Human Performance.

3.3 DAMP Item 1.2.3

a. Inspection Scope

The team reviewed DAMP Item 1.2.3: "Establish a self-assessment and benchmarking schedule. This action should include industry meetings and non-FENOC plants for benchmarking."

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and benchmarking schedules and results. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee's actions adequately implemented DAMP Item 1.2.3.

The team determined that a self-assessment and benchmarking schedule had been established, which included planned visits to peer plants.

The team noted that the licensee completed an interim self-assessment of human performance in January 2006 and a self-assessment of procedure use and adherence in May 2006. The licensee included personnel from non-FENOC plants on the team that conducted the May 2006 assessment. The team noted that condition reports were generated and corrective actions were implemented as a result of these assessments. The team determined that the licensee had scheduled an additional self-assessment of human performance for September 2006. In addition, NOBP-LP-2001, "FENOC Self-Assessment/Benchmarking," Revision 8, required the development of an annual site self-assessment schedule.

The team noted that the licensee had scheduled a benchmarking trip to a peer plant for July 2006 and determined through interviews that the licensee was actively working to establish additional trips to other peer plants. However, the team also noted that the licensee had yet to complete a formal benchmarking visit to a peer plant.

The team reviewed NOBP-LP-2001 to determine the program requirements for benchmarking and noted that Section 4.7.1.2, which addressed the scheduling of benchmarking, stated that, "focused benchmarking is typically initiated on an emergent basis when program performance gaps are identified or when significant improvement in a program or process is desired." The team concluded that this benchmarking scheduling policy appeared to be reactive in nature. Section 4.7.2 of NOBP-LP-2001, which addressed ongoing benchmarking stated, "all FENOC organizations are expected

to frequently compare FENOC performance to industry peers by participating in activities such as brief visits at other sites, industry conferences, seminars, workshops, surveys, etc. Since these types of activities have pre-established objectives it is not necessary to develop benchmarking plans and checklists.” Therefore, the team concluded that although a current benchmarking trip schedule existed, NOBP-LP-2001 did not specifically require that a schedule for benchmarking trips be established and did not require that benchmarking plans and checklists be established for ongoing benchmarking trips.

The team concluded that benchmarking trips to other facilities with a record of good human performance prior to the identification of training needs and the identification of other human performance related corrective actions could have served as an additional mechanism to ensure that the actions planned were thorough and comprehensive. The team also concluded that the licensee’s current benchmarking plans were not specifically prescribed by policy or procedure.

4.0 Strengthen Line Ownership, Alignment, and Integration

The following DAMP Action Items in the “Strengthen Line Ownership, Alignment, and Integration” area of PYBP-PII-002, “Performance Improvement Initiative Detailed Action and Monitoring Plan (DAMP),” Revision 7, were reviewed:

- DAMP Item 2.1.1: “Expand the Site Advocate position to include responsibilities for stewardship of the program’s technical content. Establish stronger line organizational presence and reporting of the Site Advocate.”
- DAMP Item 2.1.2: “Establish the Human Performance Team by performing the following actions: 1) Assign a management sponsor to the committee, 2) Assign group representatives and alternates to participate in the Human Performance Leadership Team, 3) Conduct routine meetings (nominally, monthly meetings), and 4) Design and implement interventions to improve performance as needed.”
- DAMP Item 2.1.4: “Staff a temporary position responsible for coordinating HU [Human Performance] observations.”
- DAMP Item 2.1.5: “Allocate MAOM [Management Alignment and Ownership Meeting] meeting time to Human Performance discussion on topics such as improvement initiative status, utilization of human performance on daily activities involving risk, discussion of department/site human performance (metrics).”
- DAMP Item 2.2.1: “Refine metrics for monitoring station and section human performance (beyond the site clock reset). Consider tracking error rates to better monitor station and section human performance. Monitor performance and report results to the sections in routine meetings.”

To accomplish these reviews, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, original and revised procedures, training plans and training attendance records, and meeting schedules and

minutes. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished.

4.1 DAMP Item 2.1.1

a. Inspection Scope

The team reviewed DAMP Item 2.1.1: "Expand the Site Advocate position to include responsibilities for stewardship of the program's technical content. Establish stronger line organizational presence and reporting of the Site Advocate."

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and original and revised position descriptions. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed the current and previous Site Advocate position descriptions and interviewed the Perry Site Advocate to determine whether the responsibilities of this position has been appropriately expanded.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee's actions adequately implemented DAMP Item 2.1.1.

The team determined that the roles and responsibilities of the Station Human Performance Advocate were expanded in NOBP-LP-2601, Revision 2, to include responsibilities for stewardship of the program's technical content. To establish a stronger line organizational presence and reporting of the Site Advocate, the reporting requirements were revised to prescribe that the Site Advocate report to the Director of Site Operations. However, the team noted that the organization chart referred to the Station Human Performance Advocate by name, not position title, which was not consistent with other organizational positions on the organization chart.

4.2 DAMP Item 2.1.2

a. Inspection Scope

The team reviewed DAMP Item 2.1.2: "Establish the Human Performance Team by performing the following actions: 1) Assign a management sponsor to the committee, 2) Assign group representatives and alternates to participate in the Human Performance Leadership Team, 3) Conduct routine meetings (nominally, monthly meetings), and 4) Design and implement interventions to improve performance as needed."

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and original and revised procedures. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed PYPB-SITE-2601, "Perry Human

Performance Team Charter,” Revision 0, that described the responsibilities of the Human Performance Leadership Team, and interviewed members of the Human Performance Team.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee’s actions adequately implemented DAMP Item 2.1.2.

The team determined that: 1) An appropriately qualified management sponsor had been assigned to the Human Performance Team; 2) Appropriately qualified group representatives and alternates, identified as Section Advocates, had been designated to participate in the Human Performance Team; 3) Routine meetings of the Human Performance Team had been held frequently, and at least monthly; and 4) NOBP-LP-2602, “Human Performance Success Clocks,” Revision 2, was implemented to identify significant human performance events and monitor the success of corrective actions.

Notwithstanding the overall adequate implementation of the actions, through interviews with Section Advocates the team identified some weaknesses that could potentially impact the long-term effectiveness of those actions. For example, the team identified that most Section Advocates dedicated about 1 hour a day to Human Performance program related activities, which appeared appropriate. However, in one case, the team identified a Section Advocate that only dedicated about 1 hour a week to Human Performance program activities, which could adversely impact the overall effectiveness of the initiative within that group. In addition, the team identified that the Section Advocates did not generally share a common understanding of the purpose of the program, which could impact the effectiveness of their individual actions to monitor and assess human performance within their departments.

4.3 DAMP Item 2.1.4

a. Inspection Scope

The team reviewed DAMP Item 2.1.4: “Staff a temporary position responsible for coordinating HU [Human Performance] observations.”

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports and corrective action program closure documentation. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed documentation associated with the creation and staffing of the HU Coordinator position, a list of the human performance observations considered, and the actions initiated to improve human performance resulting from the implementation of this action to determine whether the action was adequately implemented.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee's actions adequately implemented DAMP Item 2.1.4.

The team determined that the Human Performance Advocate position was established and assigned the responsibility to coordinate human performance observations. The team also determined that to assist the Human Performance Advocate, Section Condition Report analysts and Section Evaluators were identified to analyze work group observation data. This observation data was then summarized in a semi-annual Integrated Performance Assessment (IPA) report for each department.

Site Section Managers analyzed and trended completed observations within their individual departments/sections. On a quarterly basis, the Training Manager summarized and reported to Senior Management the results of the training observations, including the overall quality of the observations. On a monthly basis, the Section Evaluators reviewed and trended the field observation data, and provided feedback to their respective departments/sections. The Section Advocates then forwarded the monthly field observation data to the Site Human Performance Advocate.

The Site Human Performance Advocate reviewed the field and training observation data and presented a summary of the issues to the Site Training Advisory Committee (STAC) on a monthly basis.

4.4 DAMP Item 2.1.5

a. Inspection Scope

The team reviewed DAMP Item 2.1.5: "Allocate MAOM meeting time to Human Performance discussion on topics such as improvement initiative status, utilization of human performance on daily activities involving risk, discussion of department/site human performance (metrics)."

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and meeting schedules. In particular, the team reviewed selected MAOM packages dated from January 2006 through May 2006, and attended five MAOM meetings. The team also reviewed human performance field observation reports and observed verbal human performance reports during MAOM meetings, including verbal reports regarding field activities also observed by the inspection team.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee's actions adequately implemented DAMP Item 2.1.5.

The team determined that human performance topics such as PII status, the use of human performance during daily activities involving risk, and human performance metrics were regularly discussed by the management team at the MAOM meetings. In

particular, the MAOM meetings observed by the team consistently included human performance discussions, including the results of field observations.

4.5 DAMP Item 2.2.1

a. Inspection Scope

The team reviewed DAMP Item 2.2.1: “Refine metrics for monitoring station and section human performance (beyond the site clock reset). Consider tracking error rates to better monitor station and section human performance. Monitor performance and report results to the sections in routine meetings.”

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and metrics. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed the input data and calculation methodology associated with the refined human performance metrics. The team also compared the licensee’s performance metric calculation methodology to industry methodology. The team reviewed the human performance metric descriptions and requirements in NOBP-LP-2601, “Human Performance Program,” and licensee plans to communicate the results to licensee staff.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee’s actions adequately implemented DAMP Item 2.2.1.

The team determined that the human performance metrics had been revised to be comparable to a level consistent to what had been recognized as an industry best practice. The team determined that the refined performance metrics included Station and Section error rates and were based on human performance problems at a relatively low significance level. The team determined that the refined metrics compiled and tracked information to ensure results could be promptly evaluated and communicated.

5.0 **Improve Line Accountability For Results**

a. Inspection Scope

The following DAMP Action Item in the “Improve Line Accountability for Results” area of PYBP-P11-002, “Performance Improvement Initiative Detailed Action and Monitoring Plan (DAMP),” Revision 7, was reviewed:

- DAMP Item 3.1.2: “Revise manager and supervisor performance management plans (PMPs) to assure line ownership and implementation of the human performance program.”

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and PMPs. In particular, the team reviewed manager and supervisor PMPs and determined whether the revised PMPs included a human performance program implementation element.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee's actions adequately implemented DAMP Item 3.1.2.

The team determined that all required manager and supervisor PMPs had been appropriately revised to include a human performance program implementation element with clear line ownership responsibilities.

6.0 Address Procedure Adherence Directly

The following Commitments and DAMP Action Items in the "Address Procedure use and Adherence" area of PYBP-PII-002, "Performance Improvement Initiative Detailed Action and Monitoring Plan (DAMP)," Revision 7, were reviewed:

- Commitment 3.a: "Roles and responsibilities of the Site Leadership Team in implementing the human performance program will be defined and communicated."
- DAMP Item 1.3.3: "Define and communicate the roles and responsibilities of Perry managers, directors, and the site vice president in implementing the human performance program."
- Commitment 3.b: "Approximately monthly Site Training Advisory Committee and department/section Training Review Committee meetings have been held and will continue to be conducted with a strong focus on human performance through fourth quarter 2005."
- DAMP Item 2.3.1: "Conduct monthly (nominal) meetings of the STAC with a strong focus on Human Performance (HU)."
- Commitment 3.c: "The purpose and key activities of the Human Performance Program will be communicated to Perry Nuclear Power Plant (PNPP) personnel."
- DAMP Item 1.3.1: "Develop and implement a communications plan to communicate the purpose and key activities of the human performance initiative."
- Commitment 3.d: "Group-specific needs analysis will be performed by training committees to determine the scope and content of initial and continuing training needs on human performance fundamentals and error prevention tools and training will be provided."

- DAMP Item 1.3.4: “The training committee shall perform a group-specific needs analysis to determine the scope and content of initial and continuing training needs on human performance fundamentals and error prevention tools.”
- DAMP Item 1.3.5: “Present Human Performance Fundamentals as determined by needs analysis to the appropriate station staff.”
- DAMP Item 1.3.7: “Provide supplemental skill training for key supporting groups based on identified needs within the human performance program.”

To accomplish these reviews, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, original and revised procedures, training plans and training attendance records, and meeting schedules and minutes. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. For example, in some cases the team interviewed licensee personnel whose names appeared on training attendance sheets to determine whether these personnel had received the subject training and to determine whether the personnel were knowledgeable of the training material.

6.1 Commitment 3.a/DAMP Item 1.3.3

a. Inspection Scope

The team reviewed Commitment 3.a: “Roles and responsibilities of the Site Leadership Team in implementing the human performance program will be defined and communicated,” and associated DAMP Item 1.3.3: “Define and communicate the roles and responsibilities of Perry managers, directors, and the site vice president in implementing the human performance program.”

To determine whether this Commitment and DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, original and revised procedures, and training plans and training attendance records. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed documentation that defined the roles and responsibilities of the Site Leadership Team, training attendance plans that communicated these roles and responsibilities to site personnel, and training attendance records that documented the completion of the subject training.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee’s actions adequately implemented Commitment 3.a/DAMP Item 1.3.3.

The team determined that the roles and responsibilities of the Site Leadership Team in implementing the human performance program were adequately defined in NOBP-LP-2601, “Human Performance Program,” Revision 2.

These roles and responsibilities were communicated to Perry management as prescribed by the corrective actions identified to address Condition Report (CR) 05-02517. This corrective action required that Perry management become familiar with their roles and responsibilities through a review of NOBP-LP-2601 and NOPL-LP-2008, "Human Performance," Revision 0. Each manager formally documented a familiarity with their individual roles and responsibilities.

The roles and responsibilities of the Site Leadership Team in implementing the human performance program were communicated to site personnel through the following methods: 1) An "Introduction to Human Performance Fundamentals" training session conducted using HU-TOOLSINTROFUND_PY-02, described leadership behaviors as they applied to preventing events and errors that cause events; 2) A full-day "Human Performance Fundamentals" training session was conducted with handouts provided to participants including NOPL-LP-2008, "Human Performance Policy," and NOBP-LP-2601, "Human Performance Program," and all related procedures; and 3) The November 10, 2005, daily "Human Performance Message" described the roles and responsibilities of the Site Leadership Team.

6.2 Commitment 3.b/DAMP Item 2.3.1

a. Inspection Scope

The team reviewed Commitment 3.b: "Approximately monthly Site Training Advisory Committee (STAC) and department/section Training Review Committee (TRC) meetings have been held and will continue to be conducted with a strong focus on human performance through fourth quarter 2005," and associated DAMP Item 2.3.1: "Conduct monthly (nominal) meetings of the STAC with a strong focus on Human Performance (HU)."

To determine whether this Commitment and DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, original and revised procedures, and meeting schedules and minutes. In particular, the team reviewed STAC, TRC, and Curriculum Review Committee (CRC) meeting minutes from the third and fourth quarter of 2005 and the first and second quarter of 2006 to determine whether the meetings were held approximately monthly and whether the results of those meetings, as reflected in the minutes, had a strong human performance focus. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee's actions adequately implemented Commitment 3.b/DAMP Item 2.3.1.

The team determined that STAC, TRC, and CRC meetings were held about monthly and maintained a strong focus on human performance. In addition to a discussion of the training aspects of human performance, these meetings also routinely included a

discussion of the Human Performance Program and the status of the Perry Performance Improvement Initiative.

6.3 Commitment 3.c/DAMP Item 1.3.1

a. Inspection Scope

The team reviewed Commitment 3.c: “The purpose and key activities of the Human Performance Program will be communicated to Perry Nuclear Power Plant (PNPP) personnel,” and associated DAMP Item 1.3.1: “Develop and implement a communications plan to communicate the purpose and key activities of the human performance initiative.”

To determine whether this Commitment and DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, original and revised procedures, and training plans and training attendance records. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed training plans and training attendance records associated with the communication of the purpose and key activities of the Human Performance Program to site personnel.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee’s actions adequately implemented Commitment 3.c/DAMP Item 1.3.1.

The purpose and key activities of the Human Performance Program were communicated to site personnel through the following methods: 1) Site personnel participated in training session HU-TOOLSINTROFUND_PY-02, “Introduction to Human Performance Fundamentals, Revision 0, which focused on individual behaviors, leader behaviors, and organization processes and values; explained the human performance principles; and described how those principles provided additional barriers to plant events through individual behaviors, leader behaviors, and organizational processes and values; and 2) Site personnel participated in a full-day “Human Performance Fundamentals” training session, with handouts that included NOPL-LP-2008, “Human Performance Policy,” and NOBP-LP-2601, “Human Performance Program.”

6.4 Commitment 3.d/DAMP Item 1.3.4/DAMP Item 1.3.5/DAMP Item 1.3.7

a. Inspection Scope

The team reviewed Commitment 3.d: “Group-specific needs analysis will be performed by training committees to determine the scope and content of initial and continuing training needs on human performance fundamentals and error prevention tools and training will be provided.” The team also reviewed associated DAMP Item 1.3.4: “The training committee shall perform a group-specific needs analysis to determine the scope and content of initial and continuing training needs on human performance fundamentals and error prevention tools,” associated DAMP Item 1.3.5: “Present

Human Performance Fundamentals as determined by needs analysis to the appropriate station staff,” and associated DAMP Item 1.3.7: “Provide supplemental skill training for key supporting groups based on identified needs within the human performance program.”

To determine whether this Commitment and DAMP items had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, original and revised procedures, and training plans and training attendance records. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed a description of the methods used to complete the group-specific needs analysis and the results of that analysis to determine if the methods were appropriate. The team also reviewed revisions to the scope and/or content of affected training programs as a result of the group-specific needs analysis and documentation that identified the basis for the revisions to determine if the revisions were consistent with the results of the analysis. Finally, the team reviewed training plans and training attendance records associated with the communication of error prevention tools to determine whether the training was adequate to accomplish planned goals, and was attended by all required personnel.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee’s actions adequately implemented Commitment 3.d/DAMP Item 1.3.4/DAMP Item 1.3.5./DAMP Item 1.3.7.

The team reviewed the group-specific needs analyses conducted by the following Curriculum Review Committees/Training Review Committees: Maintenance TRC, Operations TRC, Engineering Support Personnel TRC, Chemistry CRC, Radiation Protection CRC, Supplemental CRC, and balance of Perry personnel CRC. Gaps in training were determined by the using appropriate Systems Approach to Training (SAT) methodology prescribed by NOBP-TR-1102, “FENOC Needs and Performance Gap Analyses,” Revision 1. In all analyses, a training need was identified for initial and continuing training. The initial training programs were further reviewed to determine training necessary for all station personnel.

The Curriculum Review Committees/Training Review Committees determined that in addition to specialized human performance training in the areas of procedure use and adherence, procedure writing principles and practices, human error and procedures, engineering change packages, human performance management, field observations and human performance, and engineering human performance tools, all personnel assigned to Perry required human performance fundamentals and error prevention tools training. As a result, “Human Performance Fundamentals” and “Event Free Tools” training was provided to all site personnel between October 2005 and March 2006, was incorporated into all initial and continuing training programs, and was presented to new personnel as part of their initial site training. The team reviewed the lesson materials and determined that the materials contained comprehensive fundamental human performance fundamentals training and was developed using an appropriate SAT methodology.

The team reviewed the methods used by managers to ensure successful completion of training and attendance records to verify all members of the target population completed the training. Group training coordinators ensured individuals were enrolled in the required training and ensured each individual was then given the job assignment to attend the training. Instructors were responsible for recording attendance at training and for the notification of line and training management if staff failed to attend scheduled training. In addition, a Remedial/Make-up Training Recommendation form was completed for any individual who failed to attend scheduled training with the requirement to attend a make-up session by the end of the following training cycle. Through a review of training completion reports, the team determined that all required personnel had received the necessary supplemental skills training with the exception of personnel on long-term disability or on long-term assignments at other FENOC facilities.

7.0 Confirm Initiative Effectiveness

a. Inspection Scope

The following DAMP Action Item in the “Confirm Initiative Effectiveness” area of PYBP-PII-002, “Performance Improvement Initiative Detailed Action and Monitoring Plan (DAMP),” Revision 7, was reviewed:

- DAMP Item 5.1.1: “Perform an interim effectiveness review.”

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and self-assessments. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, to determine whether this item was adequately implemented, the team reviewed the description of the methods used to complete the interim effectiveness review, documentation that assigned personnel to conduct the review, the review results, and actions planned to address the review results.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee’s actions adequately implemented DAMP Item 5.1.1.

The team determined that the licensee completed an interim effectiveness review of CR 05-02517 on January 20, 2006, in accordance with a review plan that addressed the issues identified in CR 05–02517. The team determined that issues identified during the review as areas for improvement were entered into the licensee’s corrective action program, and that the human performance program was appropriately enhanced as a result of the implementation of identified corrective actions.

8.0 Perry Phase 1 DAMP Action Items

The following Phase 1 DAMP Action Items were reviewed:

- DAMP Item B1.10: "Perform a review of the Human Performance Program."
- DAMP Item B1.10.1: "Evaluate the Human Performance Program Review Package and implement any remedial actions to ensure the program will support safe reliable plant operation."
- DAMP Item D10.7: "An improvement plan will be developed and any new actions added to this initiative to regain the value intended for trending and feedback to personnel on expected standards by the Field Observation Program (04-02468-77)."

To accomplish these reviews, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and snapshot self-assessment reports. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished.

8.1 DAMP Item B1.10/DAMP Item B1.10.1

a. Inspection Scope

The team reviewed DAMP Item B1.10: "Perform a review of the Human Performance Program;" and DAMP Item B1.10.1: "Evaluate the Human Performance Program Review Package and implement any remedial actions to ensure the program will support safe reliable plant operation."

To determine whether these DAMP items had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, original and revised procedures, and program review results. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed the Human Performance Program review report and determined whether the observations contained in the report were consistent with problems previously identified and provided insights into the underlying causes of human performance problems at Perry. The team also reviewed the following snapshot assessments:

- 849-P11-2006, Fourth Quarter 2005 Performance Improvement Initiative
- 829-PYHU-2006, Interim Effectiveness Review of the Perry P11
- 864-PNED-2006, INPO Performance Objective and Criteria
- 877-P11-2006, Corrective Action Program Implementation Effectiveness

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee's actions adequately implemented DAMP Item B1.10 and DAMP Item B1.10.1.

The Human Performance Program required quarterly snapshot self-assessments using NOBP-LP-2001, "FENOC Self-assessment/Benchmarking," Revision 8.

The team determined that although PYBP-P11-0006, "Performance Improvement Initiative Business Practice," Revision 2 required a first-quarter 2006 snapshot self-assessment, this required assessment was not performed. Licensee personnel generated CR 06-02722 to identify this missed assessment.

With respect to completed snapshot assessments:

- 849-P11-2006 identified the following three issues: 1) poor P11 Action Item closure package documentation quality, 2) inadequate Performance Overview Panel (POP) issue follow-up and closure; and 3) inconsistent employee knowledge and understanding of the P11 details. To address these issues, the following corrective actions were implemented:
 - PYBP-P11-0006, "Performance Improvement Initiative Process," was revised to improve and clarify the standards and expectations for P11 closure package documentation.
 - During the March 2006 POP meeting, emphasis was placed on issue closure, the value of sustaining each action was discussed, and the approach to assigning new action items to address POP issues was revised. In addition, P11 project personnel and the POP chairman reviewed the status of all action items.
 - The Employee Engagement and Communications initiative owner established a team of employees to systematically provide quality information to the Communications Specialist. In addition, the Employee Engagement and Communications initiative team performed a bi-monthly snapshot assessment to gauge the effectiveness of the communications that were provided.
- 829-PYHU-2006 identified several administrative issues associated with P11 closure documentation. Overall, the Human Performance P11 effort was determined to be behind schedule. Corrective actions included the development of a charter for the Human Performance Team, a revision to the Communication Plan, and the development of a schedule recovery plan.
- 864-PNED-2006 identified the following three areas for improvement: 1) The cognitive binning that was performed within the Perry Nuclear Engineering Department (PNED) on a daily basis did not utilize the Human Performance Model; 2) Engineering Section Clock Reset events had not been communicated throughout engineering; and 3) Job briefs had not been performed as stated in the business practice for job briefs. Corrective actions implemented to address these issues included the use of the Human Performance Model for PNED cognitive binning, communication of all Engineering Section Clock Reset events to all PNED personnel, and the communication of job briefing expectations to PNED personnel.

- 877-PII-2006 identified that documentation in the PII closure packages was sometimes inadequate. Corrective actions to address this issue included a recommendation to provide training on the requirements of PYPB-PII-0006 for the closure of PII items.

The team concluded that based upon the issues identified, the snapshot reviews were thorough. The team also identified that the corrective actions implemented appeared adequate to address the identified issues.

8.3 DAMP Item D10.7

a. Inspection Scope

The team reviewed DAMP Item D10.7: “An improvement plan will be developed and any new actions added to this initiative to regain the value intended for trending and feedback to personnel on expected standards by the Field Observation Program (04-02468-77).”

To determine whether this DAMP item had been adequately implemented, the team reviewed selected documentation such as condition reports, corrective action program closure documentation, and procedures. In addition, the team conducted interviews of cognizant licensee personnel to determine whether actions had been accomplished. In particular, the team reviewed the Field Observation Program, the subject improvement plan, as well as actions added to the initiative, to determine whether this item had been adequately implemented.

b. Observations and Findings

No findings of significance were identified and the team concluded that the licensee’s actions adequately implemented DAMP Item D10.7.

The team determined that Cognitive Trending Reports and Integrated Performance Assessments were performed in accordance with developed standards. The team also determined that the negative performance trends identified through these assessments had been entered into the licensee’s corrective action program. The team also determined that corrective actions that had been identified to address these trends as they applied to the Field Observation Program (Corrective Action 04-02468-77) were comprehensive and, if implemented as written, should regain the intended purpose to provide human error prevention feedback to licensee personnel.

9.0 **Key Performance Indicators (KPIs)**

a. Inspection Scope

The team reviewed existing human performance key performance indicators (KPIs) to evaluate the quality of the indicators, and overall human performance based upon the licensee’s KPI data.

b. Observations and Findings

The team reviewed the three KPIs the licensee developed in the area of human performance: Human Performance Success Days, Section Clock Resets, and Error Rate. The Human Performance Success Days and Section Clock Resets KPIs were implemented in 2005. The Error Rate KPI was implemented during the first quarter of 2006.

The Human Performance Success Days KPI measured the number of continuous days of event free operation on a 12-month rolling average basis. A qualifying event was identified as any event initiated or complicated by an inappropriate human action that resulted in the generation of a condition report, and as identified by the management team in accordance with the criteria established in the Human Performance Event-Free Clock Guidelines. Performance goals for this KPI were a 12-month rolling average of greater than 70 event-free days and a monthly clock reset goal of zero. As of the end of May 2006, the 12-month rolling average was 91 event-free days with one clock reset in February. Based upon current trends, the licensee expected this KPI to be Green in their performance color-coding system by the end of 2006.

The Section Clock Resets KPI measured events caused by improper human performance that had consequences meeting the criteria established in Attachment 5, "Section Clock Reset Criteria," of NOBP-LP-2602, "Human Performance Success Clocks," Revision 1. The KPI data reflected that the 12-month average number of clock resets had increased from 5.5 in January 2006 to 12.6 at the end of May 2006.

The Error Rate KPI measured individual errors, defined as a human performance problem that was specific to an individual. The individual error rate was then calculated as a function of the number of individual errors that met the criteria for a Section Clock Reset for every 10,000 person-hours of work. Input data for this KPI was obtained from the Condition Report Evaluation and Status Tracking system. Performance goals for this KPI were a 12-month rolling average error rate of less than 4 individual errors for every 10,000 person-hours of work and a monthly individual error rate of less than 4 errors for every 10,000 person-hours of work. The KPI data reflected that the highest monthly error rate to date for calendar 2006 was 2.30, with an average monthly rate of 1.60. Because this KPI had not been implemented for 12 months, no annual data was available for comparison to station performance goals.

The team concluded that the KPIs that had been developed were adequate and that the licensee had implemented a process that adequately collected and input human performance data into the KPI metrics.

10.0 "Snapshot" Effectiveness Review

a. Inspection Scope

A "snapshot" review of the interim effectiveness of the Human Performance initiative was performed through the observation of routine evolutions in the control room and the observation of maintenance and surveillance activities. These reviews focused on the

level at which human performance error prevention tools such as self-checking, peer checking, independent verification, and three-way communications were utilized. The following specific activities were observed:

Control Room Activities

- Operator coordination and preparation for a Division 1 emergency diesel generator (EDG) surveillance from the control room on June 13, 2006.
- Operator response to the failure of a relay in the control room associated with control room annunciator power supplies on June 13, 2006.

Surveillance Testing Activities

- Surveillance testing performed on the 'B' oscillation power range monitor (OPRM) system following maintenance on June 16, 2006.
- Surveillance testing performed on the 'B' main steam line radiation monitor on June 16, 2006.
- Surveillance testing of the Division 1 EDG on June 13, 2006.

Maintenance Activities

- 'B' main transformer cooling coil maintenance on June 14, 2006.
- Motor feed pump low flow control valve maintenance on June 15, 2006.
- 'B' OPRM system power supply maintenance on June 16, 2006.

b. Observations and Findings

The team determined that for the activities observed, human performance error prevention tools were routinely utilized. In addition, the team noted that some maintenance work orders included steps to discuss the use of applicable human performance error prevention tools. The team also observed some pre-job briefings in which the primary maintenance workers performed the pre-job briefing, instead of the first line supervisor. This practice appeared to foster increased dialog and interaction among workers, which the team viewed as beneficial.

However, two issues were identified by the licensee during the inspection period in which the use of error prevention tools was not effective:

- During the performance of SVI-C51T5351, "Local Power Range Monitor Calibration," an error in the calculation of instrument gain factor occurred. As a result of this error, the gain for both the 'A' and 'E' average power rate monitors (APRMs) were improperly adjusted until the error was self-identified and corrected. Licensee personnel generated CR 06-02706 to enter this issue into the corrective action program.

- During performance of SOI-R43, "Division 1 and 2 Diesel Generator System," licensee personnel identified that an independent verification of the Division 1 EDG starting-air lineup was not performed, as required. Licensee personnel generated CR 06-02789 to enter this issue into the corrective action program.

For these two activities, the team reviewed the associated CRs, related work packages, the results of the licensee investigations, and the associated success clock reset evaluations. The team also interviewed personnel involved in the events. Because the process included several opportunities for self-checking and multiple requirements for independent verification, the team concluded that the events resulted from the ineffective implementation of error prevention tools. The team also determined that since both events were non-consequential, they were considered to be minor in nature.

During surveillance SOI-R43, the team observed the use of procedures which contained symbols instead of words to designate component positions such as Closed, Open and Auto. In another procedure, the team noted that the symbol "\$" was used to represent Technical Specifications. Use of these types of symbols appeared to be inconsistent with PAP-0500, "Perry Technical Procedure Writer's Guide," which stated, "Avoid using symbols in work steps. Errors in interpretation may result." Licensee personnel contacted by the team were unable to describe any value associated with the use of symbols rather than words in procedures.

11.0 Exit Meeting

On July 11, 2006, the inspection results were presented to Mr. L. 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.

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

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

G. Leidich, Chief Nuclear Officer, 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. von Ahn, Plant Manager, Perry
F. Cayia, Director, Performance Improvement, Perry
K. Howard, Manager, Design, Perry
J. Lausberg, Manager, Regulatory Compliance, Perry
G. Halnon, Director, Performance Improvement Initiative, Perry
J. Messina, Manager, Operations, Perry
J. Shaw, Director, Engineering, Perry
M. Wayland, Director, Maintenance, Perry

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

None.

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 team 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.

Training Course Lesson Plans

ESPC-ALL200601_PY, ESRP Continuing Training 1Q06, Revision 1
ESPC-DES0502_PY, Engineering Change Package Refresher Training, Revision 0
HU-INTROTOHU_PY-01, Revision 0, Introduction to Human Performance
HU-INTROTOHU_PY-02, Revision 0, Excellence in Human Performance
HU-INTROTOHU_PY-03, Revision 0, How Events Happen
HU-INTROTOHU_PY-04, Revision 0, Individual Behaviors
HU-MANAGEHU_PY, Managing Human Performance at Perry, Revision 0
HU-TOOLSINTROFUND_PY-02, Revision 0, Human Performance Fundamentals
HU-TOOLS_PY-01, Revision 0, The Event Free Tools
HU-TOOLS_PY-02, Revision 0, Self-Checking, Peer Checking and Procedure Adherence
HU-TOOLS_PY-03, Revision 0, Effective Communications
HU-TOOLS_PY-04, Revision 0, Job Briefs
MISCPROCEDUSE_PY, Procedure Use and Adherence, Revision 0,

Meeting Minutes

Human Performance Team meetings held on May 20, 2005; June 28, 2005; July 6, 2005; July 28, 2005; August 26, 2005; September 30, 2005; November 30, 2005; January 20, 2006; February 14, 2006; February 16, 2006; February 21, 2006; March 17, 2006; March 16, 2006; March 21, 2006; March 23, 2006; March 28, 2006; March 30, 2006; April 6, 2006; May 4, 2006; May 25, 2006; and July 28, 2006
Site Training Advisory Committee meetings held on 7/25/05, 8/22/05, 9/26/05, 10/24/05, 11/28/05, 12/16/05, 01/23/06, 3/6/06, 4/24/06, and 5/22/06
Maintenance Training Review Committee meetings held on 7/29/05, 8/25/05, 9/28/05, 10/21/05, 11/30/05, 12/16/05, 01/30/06, 2/24/06, 3/24/06, and 4/28/06
Engineering Support Personnel Training Review Committee meetings held on 7/25/05, 8/25/05, 9/30/05, 10/31/05, 11/029/05, 12/28/05, 01/31/06, 2/27/06, 3/28/06, and 4/20/06
Operations Training Review Committee meetings held on 7/22/05, 8/17/05, 9/28/05, 10/17/05, 11/21/05, 12/20/05, 01/16/06, 2/21/06, 3/20/06, and 4/17/06
Supervisor Training Review Committee meetings held on 8/22/05, 9/27/05, 10/27/05, 12/13/05, 1/9/06, 2/13/06, 3/8/06, and 4/26/06
Electrical Maintenance Curriculum Review Committee meetings held on 7/13/05, 8/17/05, 9/21/05, 10/12/05, 11/9/05, 12/15/05, 01/24/06, 2/22/06, and 3/23/06
Instrumentation and Controls Curriculum Review Committee meetings held on 7/25/05, 9/13/05, 10/13/05, 11/11/05, 12/13/05, 01/26/06, and 2/14/06
Maintenance Services Curriculum Review Committee meetings held on 7/27/05, 8/18/05, 9/15/05, 10/20/05, 11/17/05, 12/14/05, 1/12/06, 3/15/06, and 4/13/06
Mechanical Maintenance Curriculum Review Committee meetings held on 7/13/05, 8/23/05,

9/20/05, 10/19/05, 11/15/05, 12/12/05, 01/25/06, 2/21/06, and 3/28/06
Non-licensed Operator Curriculum Review Committee meetings held on 9/8/05, 12/1/05, and 2/2/06
Radiation Protection Curriculum Review Committee meetings held on 10/18/05, 10/28/05, 11/15/05, and 12/13/05
Chemistry Curriculum Review Committee meetings held on 10/18/05, 10/28/05, 11/15/05, 12/13/05, 01/25/06, and 2/7/06
Shift Engineer Curriculum Review Committee meetings held on 7/29/05, 11/19/05, 12/16/05, 1/19/06, and 3/29/06
Shift Manager Curriculum Review Committee meetings held on 9/27/05, 11/18/05, 12/19/05, 2/2/06, and 3/23/06
Maintenance Supervisor Curriculum Review Committee meetings held on 9/27/05, 10/27/05, 12/13/05, 01/09/06, 2/13/06, and 3/20/06

Condition Reports

CR 05-02517, "Human Performance Cross-Cutting Issue"
CR 05-03986, "PY-C-05-01: Corrective Action Effectiveness Rated as Ineffective (Red)"
CR 05-04390, "Site Human Performance Team Action Item Tracking"
CR 05-05241, "Revise the Human Performance Program Business Practice NOBP-LP-2601 to Expand Upon Roles and Responsibilities of Key Personnel"
CR 05-05242, "Evaluate and Provide More Specificity of Line Manager Versus Site Advocate Organizational Interface Within NOBP-LP-2601"
CR 06-00193, "Partial SVI-C71-T0253A Half-Scram Testing"
CR 06-00732, "Scaffold Table Build"
CR 06-01442, "PYTM Cognitive Trending Identifies Negative Trend In Objective 2"
CR 06-01749, "Inconsistent Standards May Exist In Procedure Use/Quality In FOCS and CRS"
CR 06-02175, "Revision 1 to NOBP-LP-2601 Removed the Roles and Responsibilities for the Site VP and Directors, Other Than the Director of Site Operations..."
CR 06-02176, "CVRB Rejected HU DAMP Closure Packages 1.1.1, 1.3.2, 1.3.3, 2.1.2, and 2.1.3 on 5/11-12/06"
CR 06-02287, "This CR Documents CVRB Rejection of HU DAMP Items 2.2.1 and 5.1.1"
CR 06-02433, "Suppression Pool FME [Foreign Material Exclusion] Tracking Log Missing from the Perry S:\Drive"
CR 06-02433, "Change to Approach to Performance of Statistical CR Trending"
CR 06-02706, "LPRM [Local Power Range Monitor] Calibration Human Error During SVI-C51T5351"
CR 06-02768, "Duty Team Observation Report Out Missing For 6/19/2006"
CR 06-02789, "Missed Independent Verification"
CR 06-02811, "NRC HU Inspection Team - Use of Symbols Considerate of Human Factors"

Snapshot Assessment Reports

829-PYHU-2006, Interim Effectiveness Review of Perry's Performance Improvement Initiative, Excellence in Human Performance and Associated Root Cause Condition Report #05-02517, Human Performance Cross Cutting Issue
849-PII-2006, [Snapshot Assessment of] Fourth Quarter [2005] Performance Improvement Initiative
864-PNED-2006, INPO Performance Objective and Criteria (PO&C) Assessment of the Perry

Nuclear Engineering Department (PNED)
877-PII-2006, Assessment of the Perry Nuclear Power Plant Performance Improvement
Initiative - Corrective Action Program Implementation Effectiveness

Policies and Procedures

NOBP-LP-2010, Crest Trending Codes, Revision 4
NOBP-LP-2018, Integrated Performance Assessment/Trending, Revision 1
NOBP-LP-2601, Human Performance Program, Revision 2
NOBP-LP-2601, Human Performance Program, Revision 1
NOBP-LP-2602, Human Performance Success Clocks, Revision 2
NOBP-LP-2607, Observation and Coaching Program
NOBP-OP-0007, Conduct of Infrequently Performed Test or Evolutions
NOBP-TS-1117, Training Team Charter, Revision 0
NOP-LP-2001, Corrective Action Program, Revision 13
PAP-0500, Perry Technical Procedure Writer's Guide
PYBP-PII-0002, Performance Improvement Initiative/Detailed Action and Monitoring Plan,
Revision 7
PYBP-PII-0006, Performance Improvement Initiative Process, Revision 2
PYBP-Site-0047, Standards and Expectations for the Duty Team, Revision 0
PYPB-SITE-2601, Perry Human Performance Team Charter, Revision 0
SOI-R43, Division 1 and 2 Diesel Generator System
SVI-C51-T0051-B, OPRM Channel B Functional for 1C51-K603B
SVI-C51-T5351, LPRM Calibration
VLI-R48, Division 1 and 2 Diesel Generator Exhaust, Intake and Crankcase Systems
NOBP-TR-1103, FENOC Job and Task Analysis, Revision 0, dated June 29, 2004
NOBP-LP-2602, Human Performance Success Clocks, Revision 1, dated January 17, 2005
NOBP-LP-2607, Observation and Coaching Program, Revision 0, dated February 28, 2006
NOBP-TR-1102, FENOC Needs and Performance Gap Analyses, Revision 1, dated
May 27, 2005
NOBP-LP-2001, FENOC Self-Assessment /Benchmarking, Revision 8, dated October 6, 2005
PYBP-PTS-0001, Training Team Charter
PYBP-SITE-2601, Perry Human Performance Team Charter, Revision 0, dated March 17, 2006
PYPB-PII-0006, Performance Improvement Initiative Process, Revision 2, dated
March 15, 2006
SSC-200502-PY-01, Field Observations and Human Performance Tools, Revision 0

Miscellaneous Documents

Change Management Checklist for NOBP-LP-2601, Revision 2
Change Management Plan 05-05246-2 for Implementation of NOBP-LP-2601, Human
Performance Program, Revision 2
Examples of Section Clock Evaluations for December 2005 – January 2006, and February
2006
Human Performance Team Member Job Analysis Summary
Training Materials for NOBP-LP-2602, Human Performance Success Clocks, Revision 2
Perry Work Implementation Schedule - Week 10 and Week 11
POS-2005-0056 Forms signed by each member of the Site Leadership Team

PY-CEI/OIE-0645L, May 20, 2005 Letter from Rich Anderson to James Caldwell, Regional Administrator, Region III.
Work Order 200106641, Oscillation Power Range Monitor
Work Order 200192776, LPRM Calibration
MAOM packages from January through May of 2006
FENOC Maintenance Excellence Pre-Job/Reverse Brief Card (Form FENOC-0039, Revision 0)
FENOC (KIP) Keep Improving Performance Card
Duty Team Observations - June 7 through June 10
Duty Team Observations - June 14 through June 17
INPO Excellence in Human Performance, September 1997
FENOC 2006 Outage OnLine for February 23, 24, March 2, 3, 4, 5, 18, 25, 26, 28, 29, 30, 31, April 1, 6, 8, 9, 12, 13, 15, 16, 19, 20, 21, 22, 25, 26, May 4, 9
FENOC 2005 OnLine Article for June 23, July 21, August 4, 11, September 8, October 6, 27, December 1, 8, 15
FENOC 2006 OnLine Article for January 12, 26, February 9, 16, March 16, 30, April 20, 27
Supervisor Briefs for August 8, 2005, September 2 and 26, 2005, November 28, 2005, March 27, 2006; April 17, 2006; April 24, 2006; and May 1, 2006
Human Performance Advocate Talking Points for week of March 27 and April 10
Human Performance Outage brochure dated March 28, 2006
August 11, 2005 Site Celebration/Key Initiative Open House Fact Sheet
December 6, 2005 KIP (Keep Improving Performance) News
Performance Improvement Initiative Excellence in Human Performance - Fact Sheet
Excellence in Human Performance Improvement Initiative Recovery Plan - Communications Plan, Revision 3, dated March 10, 2006

LIST OF ACRONYMS USED

ADAMS	Agency Document and Management System
CAL	Confirmatory Action Letter
CAP	Corrective Action Program
CR	Condition Report
CRC	Curriculum Review Committee
DAMP	Detailed Action and Monitoring Plan
EDG	Emergency Diesel Generator
ESW	Emergency Service Water
FENOC	FirstEnergy Nuclear Operating Company
FME	Foreign Material Exclusion
HPCS	High Pressure Core Spray
HU	Human Performance
IMC	Inspection Manual Chapter
INPO	Institute for Nuclear Power Operations
IP	Inspection Procedure
IPA	Integrated Performance Assessment
IR	Inspection Report
KIP	Keep Improving Performance
KPI	Key Performance Indicator
LPCS	Low Pressure Core Spray
LPRM	Local Power Range Monitor
MAOM	Management Alignment and Ownership Meeting
NRC	Nuclear Regulatory Commission
OPRM	Oscillation Power Range Monitor
PARS	Publicly Available Records
PII	Performance Improvement Initiative
PMP	Performance Management Plan
PNED	Perry Nuclear Engineering Department
PNPP	Perry Nuclear Power Plant
POP	Performance Overview Panel
PYBP	Perry Business Practice
RHR	Residual Heat Removal
SAT	Systems Approach to Training
SCAQ	Significant Condition Adverse to Quality
STAC	Site Training Advisory Committee
TRC	Training Review Committee
TS	Technical Specification

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 five consecutive quarters. Specifically, for the third quarter of 2004, the waterleg pump finding remained open a fourth quarter while the ESW pump finding was carried open into a fifth 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 50-440/2005003, 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.

A number of programmatic issues were identified that 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

¹The NRC's Action Matrix is described in Inspection Manual Chapter 0305, "Operating Reactor Assessment Program."

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 hindered the ability to correct problems at an early stage before they became 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 features 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 had 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 an 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, alignment, and integration of the Institute for Nuclear Power Operation (INPO) Performance Model, 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.