

August 2, 2006

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  
NRC INTEGRATED INSPECTION REPORT 05000440/2006003

Dear Mr. Pearce:

On June 30, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Perry Nuclear Power Plant. The enclosed report documents the inspection findings that were discussed on June 23, 2006, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. In addition to the routine NRC inspection and assessment activities, Perry performance is being evaluated quarterly as described in the Assessment Follow-up Letter - Perry Nuclear Power Plant, dated August 12, 2004. Consistent with Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," plants in the Multiple/Repetitive Degraded Cornerstone column of the NRC's Action Matrix are given consideration at each quarterly performance assessment review for (1) declaring plant performance to be unacceptable in accordance with the guidance in IMC 0305; (2) transferring 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. On June 29, 2006, the NRC reviewed Perry operational performance, inspection findings, and performance indicators through the first quarter of 2006. Based on this review, we concluded that Perry continues to operate safely. We also determined that no additional regulatory actions beyond the supplemental inspection activities and increased management oversight that have already been established, are currently warranted.

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

If you contest the subject or severity of the non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Perry Nuclear Power Plant.

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

Sincerely,

**/RA/**

Mark A. Satorius, Director  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000440/2006003  
w/Attachment: Supplemental Information

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

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-440

License No: NPF-58

Report No: 05000440/2006003

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Perry Nuclear Power Plant, Unit 1

Location: Perry, Ohio

Dates: **April 1, 2006, through June 30, 2006**

Inspectors: R. Powell, Senior Resident Inspector  
M. Franke, Senior Resident Inspector  
M. Wilk, Resident Inspector  
J. House, Senior Radiation Specialist  
R. Ruiz, Reactor Engineer

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000440/2006003; 04/01/2006 - 06/30/2006; Perry Nuclear Power Plant; Adverse Weather Protection; Surveillance Testing; Event Followup.

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

### A. Inspector-Identified and Self-Revealed Findings

#### **Cornerstone: Initiating Events**

- Green. The inspectors identified a finding of very low significance when licensee personnel failed to complete tasks designed to prepare equipment for operation during high temperature conditions by March 30, 2006. The finding also affected the cross-cutting area of Human Performance because the licensee organization failed to effectively coordinate, plan, and schedule completion of summer preparation activities prior to the onset of hot weather.

This finding was more than minor because it was associated with the protection against external factors attribute of the initiating events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability. The finding was of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. No violation of NRC requirements occurred. (Section 1R01)

#### **Cornerstone: Mitigating Systems**

- Green. The inspectors identified a finding of very low safety significance and an associated non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," following a review of Licensee Event Report 05000440/2006-001-00, "Incorrect Wiring in the Remote Shutdown Panel Results in a Fire Protection Program Violation," which identified that licensee personnel failed to correct a test deficiency associated with the remote shutdown circuit in a timely manner. The test deficiency was identified on September 9, 2003. The licensee corrected a wiring error and adequately tested the circuit on January 17, 2006. As part of their corrective actions, in addition to correcting the wiring error, licensee personnel performed an extent of condition review, which did not identify any additional wiring errors. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution because licensee

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personnel failed to appropriately evaluate the significance of the issue when the test deficiency was identified and therefore failed to appropriately prioritize and implement corrective actions in a timely manner.

This finding was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding affected the reliability of the reactor core isolation cooling system during a control room fire scenario. The finding was determined through a Significance Determination Process Phase 3 analysis to be of very low safety significance due, in large part, to the low initiating event frequency of fires in the main control room as well as the availability of other mitigating systems. (Section 4OA3.1)

**B. Licensee-Identified Violations**

None.

## REPORT DETAILS

### Summary of Plant Status

The plant began the inspection period at 100 percent power. On April 21, 2006, operators reduced power to 60 percent to conduct planned maintenance activities. On April 25, 2006, operators returned power to 100 percent. On May 8, 2006, operators reduced power to 8 percent and removed the turbine generator from the grid to repair an emergent hydraulic oil leak in the drywell that affected the reactor recirculating system. On May 11, 2006, operators synchronized the turbine generator to the grid. On May 14, 2006, operators returned power to 100 percent. With the exception of planned downpowers for routine surveillance testing and rod sequence exchanges, the plant remained at 100 percent power for the remainder of the inspection period.

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness**

#### 1R01 Adverse Weather Protection (71111.01)

##### a. Inspection Scope

During June 2006, the inspectors reviewed the facility design to identify any previous hot weather challenges and limitations, and the licensee's procedures to prepare for adverse weather conditions, such as increasing ambient air temperatures. The inspectors also reviewed licensee corrective actions to address NRC Finding (FIN) 05000440/2005006-01 regarding the failure of licensee personnel to complete work associated with equipment needed prior to the onset of hot weather. The inspectors also walked down selected areas to evaluate plant equipment susceptible to high temperatures. Finally, the inspectors reviewed the status of licensee summer preparation work orders (WOs) to determine whether the work had been completed as scheduled.

This review represented one inspection sample.

##### b. Findings

Introduction: The inspectors identified a finding of very low significance when licensee personnel failed to sufficiently coordinate and adequately prepare for the onset of hot weather as prescribed by Normal Operating Procedure (NOP)-WM-2001, "Work Management Scheduling/Assessment/Seasonal Readiness Processes," Revision 5. Specifically, licensee personnel failed to complete work associated with equipment in accordance with the established schedule. As a result, tasks had not been completed prior to the onset of near record hot weather on May 28, 2006.



Description: On June 5, 2006, the inspectors reviewed the status of the licensee's summer preparation activities. Licensee procedure NOP-WM-2001, "Work Management Scheduling/Assessment/Seasonal Readiness Processes," Revision 5, required completion of summer preparation activities by March 30, 2006. The inspectors noted that there was no spring refueling outage, unusual climate change, weather condition, or electrical grid demand/stability issue that would have warranted an exception to this deadline.

The inspectors noted that the historical average monthly high temperature for Perry, Ohio, increased from 56 degrees Fahrenheit (°F) in April to 77°F in June. As such, the licensee's expectation of a summer preparedness activity completion date of March 30 appeared reasonable.

The inspectors reviewed the licensee's summer preparation work list dated June 7, 2006, and observed that four WOs that were included on the list had not yet been completed. The work list also identified that of the 54 initial summer preparation WO items, only 16 had been completed by March 30, 2006. The WOs that had not been completed by March 30, 2006, were associated with the containment vessel cooling system air handling units, the steam tunnel cooling system, the main generator transformer cooling coils, and the turbine building cooling system. Inadequate cooling to any of these systems or components had been identified as transient initiators. In addition, steam tunnel cooling had historically been a challenge to the plant in the summer.

On May 28, 2006, northeast Ohio experienced a period of near record hot weather. Outside ambient air temperatures at the plant reached about 88°F. At the time this occurred, eight summer preparation WOs had not been completed.

The inspectors determined that the failure of licensee personnel to schedule and execute seasonal work in a timely manner had been a recurrent problem. Specifically, licensee personnel initiated condition report (CR) 03-03338, "RFO9 Extension Causing Seasonal Readiness Preps to be Delayed Beyond 6/1/03," dated May 18, 2003; and CR 05-03742, "Summer Preparations Not in Compliance with NOBP-WM-2301," dated April 24, 2005. CR 03-03338 was similar to CR 05-03742 in that a planned refueling outage, which extended beyond the original restart date, was identified as the cause of the failure to adequately perform summer readiness activities. The CRs were also similar in that no corrective actions were established. Another example of a deficiency associated with weather readiness preparations was documented in CR 04-05920, "Late Performance of Winterization Activities," dated November 16, 2004.

A licensee performance deficiency was previously documented as FIN 05000440/2005006-01, dated June 30, 2005, when licensee personnel failed to complete work associated with components in accordance with established expectations that specified completion prior to April 30, 2005. As a result, tasks had not been completed prior to the onset of near record warm weather on June 5, 2005.

Analysis: The inspectors determined that the failure to complete tasks designed to prepare equipment for operation during high temperature conditions by March 30, 2006, was a performance deficiency warranting a significance evaluation in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," dated September 30, 2005. The inspectors determined that the finding was more than minor because it was associated with the protection against external factors attribute of the initiating events cornerstone and adversely affected the cornerstone's objective of limiting the likelihood of events that upset plant stability. Untimely preparations for hot weather increased the likelihood of an initiating event because equipment that could trigger an initiating event remained unprepared for higher temperatures during a period of greater likelihood for higher temperatures. The finding also affected the cross-cutting area of Human Performance because the licensee organization failed to effectively coordinate, plan, and schedule completion of summer preparation activities prior to the onset of hot weather.

Using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," dated November 22, 2005, the inspectors determined that the finding was of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

Enforcement: The inspectors determined that no violation of regulatory requirements occurred (FIN 05000440/2006003-01).

#### 1R04 Equipment Alignment (71111.04)

##### a. Inspection Scope

The inspectors conducted partial walk-downs of the system trains listed below to determine whether the systems were correctly aligned to perform their designed safety function. The inspectors used valve lineup instructions (VLIs) and system drawings during the walk-downs. The walk-downs included selected switch and valve position checks, and verification of electrical power to critical components. Finally, the inspectors evaluated other elements, such as material condition, housekeeping, and component labeling. The documents used for the walk-downs are listed in the attached List of Documents Reviewed. The inspectors reviewed the following systems:

- control complex heating, ventilation, and air conditioning (HVAC) "A" train while the "B" train was inoperable on April 18, 2006;
- high pressure core spray (HPCS) system following maintenance on May 5, 2006; and
- reactor core isolation cooling (RCIC) during maintenance on the HPCS emergency diesel generator (EDG) system on June 8, 2006.

These reviews represented three partial walkdown inspection samples.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05AQ)

a. Inspection Scope

The inspectors walked down the following areas to assess the overall readiness of fire protection equipment and barriers:

- Fire Zone 1CC-6, Control Complex HVAC system trains "A" and "B,"
- Fire Zone 1CC-3D, Unit 1 Remote Shutdown Panel Room;
- Fire Zone 0IB-1, Intermediate Building elevation 574', and Pipe Chase elevation 585';
- Fire Zone 0CC-1A, 1B, and 1C, Control Complex elevation 574'-10,"
- Fire Zone 1DG-1a, Division 2 EDG; and
- Fire Zone IB-4, Intermediate Building elevations 654'-6" and 665'.

Emphasis was placed on evaluating the licensee's control of transient combustibles and ignition sources, the material condition of fire protection equipment, and the material condition and operational status of fire barriers used to prevent fire damage or propagation. The inspectors utilized the general guidelines established in licensee procedures Fire Protection Instruction (FPI)-A-A02, "Periodic Fire Inspections," Revision 3; Perry Administrative Procedure (PAP)-1910, "Fire Protection Program," Revision 12; and PAP-0204, "Housekeeping/Cleanliness Control Program," Revision 16; as well as basic National Fire Protection Association Codes, to perform the inspection and to determine whether the observed conditions were consistent with procedures and codes.

The inspectors observed fire hoses, sprinklers, and portable fire extinguishers to determine whether they were installed at their designated locations, were in satisfactory physical condition, and were unobstructed. The inspectors also evaluated the physical location and condition of fire detection devices. Additionally, passive features such as fire doors, fire dampers, and mechanical and electrical penetration seals were inspected to determine whether they were in good physical condition. The documents listed in the List of Documents Reviewed section at the end of this report were used by the inspectors during the inspection of this area.

These reviews represented six quarterly inspection samples.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors performed an inspection of internal flooding vulnerabilities associated with the plant equipment and floor drain systems. The inspection consisted of a review of the internal flooding and the floor drain collection system design features described in the Updated Safety Analysis Report (USAR). The inspectors reviewed licensee corrective action documents to determine whether previously identified deficiencies were appropriately prioritized and addressed. The inspectors walked down the floor drain system to determine whether the installed configuration was consistent with design.

This review constituted one sample for this inspection procedure.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On May 22, 2006, the resident inspectors observed licensed operator performance in the plant simulator. The inspectors evaluated crew performance in the areas of:

- clarity and formality of communication;
- ability to take timely action in the safe direction;
- prioritizing, interpreting, and verifying alarms;
- correct use and implementation of procedures, including alarm response procedures;
- timely control board operation and manipulation, including high-risk operator actions; and,
- group dynamics.

The inspectors also observed the licensee's evaluation of crew performance to determine whether the training staff had identified performance deficiencies and specified appropriate remedial actions.

This review represented one quarterly inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the maintenance rule requirements to determine whether component and equipment failures were identified and scoped within the maintenance rule and that select structures, systems, and components (SSCs) were properly categorized and classified as (a)(1) or (a)(2) in accordance with 10 CFR 50.65. The inspectors reviewed station logs, maintenance WOs, selected surveillance test procedures, and a sample of CRs to determine whether the licensee was identifying issues related to the maintenance rule at an appropriate threshold and that corrective actions were appropriate. Additionally, the inspectors reviewed the licensee's performance criteria to determine whether the criteria adequately monitored equipment performance and to determine whether licensee changes to performance criteria were reflected in the licensee's probabilistic risk assessment. During this inspection period, the inspectors reviewed the following SSCs:

- reactor building complex drain and sump systems during the week of June 19, 2006; and
- residual heat removal system during the week of June 26, 2006.

These reviews represented two quarterly inspection samples.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed the licensee's evaluation of plant risk, scheduling, configuration control, and performance of maintenance associated with planned and emergent work activities to determine whether scheduled and emergent work activities were adequately managed in accordance with 10 CFR 50.65(a)(4). In particular, the inspectors reviewed the licensee's program for conducting maintenance risk assessments to determine whether the licensee's planning, risk management tools, and the assessment and management of on-line risk were adequate. The inspectors also reviewed licensee actions to address increased on-line risk when equipment was out of service for maintenance, such as establishing compensatory actions, minimizing the duration of the activity, obtaining appropriate management approval, and informing appropriate plant staff, to determine whether the actions were accomplished when on-line risk was increased due to maintenance on risk-significant SSCs. The following assessments and/or activities were reviewed:

- C the licensee's management of risk during maintenance on multiple control complex ventilation systems during the week of April 3, 2006;

- the licensee's management of risk while the RCIC system was considered unavailable due to a potential oil leak on April 11, 2006;
- the licensee's management of risk during emergent Division 1 emergency diesel generator (EDG) jacket water pump replacement during the week of April 24, 2006;
- the licensee's assessment and management of risk associated with a HPCS outage during the week of May 1, 2006; and
- the licensee's management of risk associated with maintenance activities affecting the motor feed pump low flow control valve actuator during the week of May 29, 2006, and June 12, 2006.

These reviews represented five quarterly inspection samples.

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Evolutions and Events (71111.14)

.1 Reactor Power Reduction To Conduct Plant Repairs

a. Inspection Scope

On April 21, 2006, operators reduced reactor power to 65 percent in order to conduct scheduled maintenance including the replacement of control rod accumulators, the repair of steam leaks, and the repair of condenser tube leaks. After several power maneuvers, the plant was returned to 100 percent power on April 25, 2006. The inspectors observed shift briefings, operator performance, and shift management coordination of activities associated with the power maneuvers. The inspectors reviewed the licensee's actions to determine whether the actions were consistent with procedures and Technical Specification (TS) requirements.

This review represented the first of four samples for this inspection procedure.

b. Findings

No findings of significance were identified.

.2 Reactor Power Ascension Following A Forced Outage

a. Inspection Scope

On May 11, 2006, licensee personnel synchronized the turbine generator to the grid. Licensee personnel performed a series of control rod line adjustments and achieved 100 percent power on May 14, 2006. The inspectors observed and reviewed licensee actions and control room activities associated with the power ascension to determine whether the licensee's actions were consistent with TS and operating instructions.

This review represented the second of four samples for this inspection procedure.

b. Findings

No findings of significance were identified.

.3 Fire In Training Education Center Auditorium

a. Inspection Scope

On May 17, 2006, the inspectors reviewed the licensee's response to a small electrical fire in the auditorium of the Training Education Center. The inspectors reviewed licensee actions and determined whether those actions were consistent with the actions prescribed by PAP-1910, "Fire Protection Program," Revision 12.

This review represented the third of four samples for this inspection procedure.

b. Findings

No findings of significance were identified.

.4 Inadvertent Halon Discharge In The Technical Support Center

a. Inspection Scope

On May 29, 2006, the halon fire protection system inadvertently actuated and discharged halon gas into the Technical Support Center. The inspectors reviewed the licensee's response to determine whether the actions of plant personnel were consistent with approved procedures and TS requirements.

This review represented the fourth of four samples for this inspection procedure.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors selected CRs related to potential operability issues associated with risk-significant components and systems. These CRs were evaluated to determine whether the operability of the components and systems was justified. The inspectors compared the operability and design criteria in the appropriate sections of the TS and Updated Safety Analysis Report (USAR) to the licensee's evaluations, and determined whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures were in place, would function as intended, and were properly controlled. Additionally,



the inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. The inspectors reviewed the following issues:

- an operability evaluation associated with the potential impacts of diesel fuel oil quality issues identified by the fuel oil vendor on April 5, 2006;
- an operability evaluation associated with an oil leak from the RCIC system on April 13, 2006;
- an operability evaluation associated with water leak-by of the safety-related waterstops of the intermediate building during the week of April 24, 2006;
- an operability evaluation associated with the failure of the HPCS condensate storage tank suction check valve to seat during testing on April 29, 2006; and
- an operability evaluation associated with equipment attached to an in-service emergency closed cooling system valve during the week of June 26, 2006.

These reviews represented five quarterly inspection samples.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed the design change package for a modification of the feed booster pump suction strainer baskets. The inspectors reviewed the engineering change package, 10 CFR 50.59 safety evaluation, and the design interface evaluations relative to the Perry licensing basis. Finally, the inspectors reviewed the WO documentation and walked down the modification to determine whether it was installed in accordance with design documents.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors evaluated the following post-maintenance testing (PMT) activities associated with risk-significant systems to assess the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written; and equipment was returned to its operational status following testing. The inspectors evaluated the activities against TS, the USAR, 10 CFR 50 requirements,



licensee procedures, and NRC generic communications. In addition, the inspectors reviewed CRs associated with PMT to determine whether the licensee was identifying problems and entering them in the corrective action program. The specific procedures and CRs reviewed are listed in the attached List of Documents Reviewed. The following post-maintenance testing activities were reviewed:

- testing of the Division 2 EDG room supply 2B fan disconnect following maintenance on March 31, 2006;
- testing of control complex chilled water system control room cooling coil "B" flow control valve 0P47-F0085B following actuator replacement on April 25, 2006;
- testing of the Division 1 EDG jacket water pump following maintenance on April 28, 2006;
- testing of the Division 3 EDG oil cooler following maintenance on May 4, 2006;
- testing of the "B" reactor recirculating loop flow control valve actuator following maintenance on May 11, 2006, and
- testing of the motor feed pump minimum flow control valve positioner following replacement on June 15, 2006.

These reviews represented six inspection samples.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors observed activities associated with a forced outage initiated on May 8, 2006. The forced outage continued through May 11, 2006, when the plant was synchronized to the grid. The inspectors assessed the adequacy of forced outage-related activities, including implementation of risk management, conformance to approved site procedures, and compliance with TS requirements. The following major activities were observed or performed:

- On May 8, 2006, the inspectors observed the licensee's control of reactor power and plant configuration during a downpower from 100 percent power to about 8 percent power. The inspectors observed shift briefings, operator performance, and shift management coordination of plant activities including removal of the turbine generator from the grid.
- From May 8 through May 11, 2006, the inspectors reviewed licensee activities to determine whether emergent issues were appropriately identified and resolved prior to power ascension.

- On May 11, 2006, the inspectors observed the licensee's closeout of the drywell and subsequent power ascension activities. The inspectors observed shift briefings, operator performance, and shift management coordination of plant activities including the synchronization of the turbine generator to the grid.

The observation of these activities represented one inspection sample.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed surveillance testing or reviewed test data for risk-significant systems or components to assess compliance with TS; 10 CFR 50, Appendix B; and licensee procedure requirements. The testing was also evaluated for consistency with the USAR. The inspectors determined whether the testing demonstrated that the systems were ready to perform their intended safety functions. The inspectors determined whether test control was properly coordinated with the control room, performed in the sequence specified in the surveillance instruction (SVI), and test equipment was properly calibrated and installed to support the surveillance tests. The procedures reviewed are listed in the attached List of Documents Reviewed. The surveillance activities assessed were:

- safety relief valve and low-low set pressure actuation channel 1B21-N668F functional routine testing conducted on April 5, 2006;
- RCIC pump and valve quarterly in-service testing conducted on April 11, 2006;
- emergency closed cooling "A" system pump and valve quarterly in-service testing conducted on April 17, 2006;
- Division 1 EDG monthly routine surveillance testing conducted on April 19, 2006;
- RHR "B" pump and valve operability quarterly in-service testing conducted on May 22, 2006; and
- average power range monitor channel "C" routine calibration conducted on June 21, 2006.

These reviews represented three routine and three in-service testing inspection samples.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed activities in the simulator control room, the Technical Support Center, the Emergency Operations Facility, and Operations Support Center during an emergency preparedness drill conducted on May 23, 2006. The inspection focused on the ability of the licensee to appropriately classify emergency conditions, complete timely notifications, and implement appropriate protective action recommendations in accordance with approved procedures.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Review of Licensee Performance Indicators for the Occupational Exposure Cornerstone

a. Inspection Scope

The inspectors discussed performance indicators with the RP staff and reviewed data from the licensee's corrective action program to determine if there were any performance indicators in the occupational exposure cornerstone that had not been identified and reviewed. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.2 Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors identified two radiologically significant work areas within radiation areas, high radiation areas (HRAs), and airborne areas in the turbine power complex and containment buildings. Selected work packages and radiation work permits (RWPs) were reviewed to determine if radiological controls including surveys, postings, air sampling data, and barricades were acceptable. Work packages included:

- RWP 060403; Flush Drain Line In RWCU Heat Exchanger Room; Revision 1;
- RWP 060317; Condensate Demineralizer Septa Filter Change-Out; Revision 0; and
- RWP 060304; Isolock Sample Valve Change-Out; Revision 0.

This review represented one inspection sample.

Two radiologically significant work areas were walked down and surveyed to determine if the prescribed RWP, procedures, and engineering controls were in place, that licensee surveys and postings were complete and accurate, and that air samplers were properly located. This review represented one inspection sample.

The inspectors reviewed selected RWPs and associated radiological controls used to access these and other radiologically significant areas, and evaluated the work control instructions and control barriers that were specified in order to determine if the controls and requirements provided adequate worker protection. Site TS requirements for HRAs and locked high radiation areas (LHRA) were used as standards for the necessary barriers. Electronic dosimeter alarm set points for both integrated dose and dose rate were evaluated for conformity with survey indications and plant policy. The inspectors attended pre-job briefings to determine if instructions to workers emphasized the actions required, (1) when their electronic dosimeters noticeably malfunctioned or alarmed; and (2) under what conditions would the workers stop the job. This review represented one inspection sample.

The inspectors reviewed job planning records and interviewed licensee representatives to determine if there were airborne radioactivity areas in the plant with a potential for individual worker internal exposures of >50 millirem committed effective dose equivalent. Barrier integrity and engineering controls performance, such as high efficiency particulate filtration ventilation system operation and use of respiratory protection, were evaluated for worker protection. Work areas having a history of, or the potential for, airborne transuranic isotopes were reviewed to determine if the licensee had considered the potential for transuranic isotopes, and provided appropriate worker protection. This review represented one inspection sample.

The adequacy of the licensee's internal dose assessment process for internal exposures >50 millirem committed effective dose equivalent was assessed to determine if affected personnel were properly monitored utilizing calibrated equipment, and that the data was analyzed, and internal exposures were properly assessed in accordance with licensee procedures. This review represented one inspection sample.

The inspectors reviewed the licensee's physical and programmatic controls for highly activated and/or contaminated materials (non-fuel) stored within the spent fuel pool. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

### .3 Problem Identification and Resolution

#### a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and condition reports related to the access control program to determine if identified problems were entered into the corrective action program for resolution. This review represented one inspection sample.

Corrective action reports related to access controls and high radiation area radiological incidents (non-performance indicator occurrences identified by the licensee in HRAs <1Rem/hr) were reviewed. Staff members were interviewed and corrective action documents were reviewed to determine if follow-up activities were being conducted in an effective and timely manner, commensurate with their importance to safety and risk based on the following:

- Initial problem identification, characterization, and tracking;
- Disposition of operability/reportability issues;
- Evaluation of safety significance/risk and priority for resolution;
- Identification of repetitive problems;
- Identification of contributing causes;
- Identification and implementation of effective corrective actions;
- Resolution of Non-Cited Violations tracked in the corrective action system; and
- Implementation/consideration of risk significant operational experience feedback.

This review represented one inspection sample.

The inspectors evaluated the licensee's process for problem identification, characterization, prioritization, and determined if problems were entered into the corrective action program and resolved. For repetitive deficiencies and/or significant individual deficiencies identified in the problem identification and resolution process, the inspectors determined if the licensee's self-assessment activities also identified and addressed these deficiencies. This review represented one inspection sample.

The inspectors discussed performance indicators with the RP staff and reviewed data from the licensee's corrective action program to determine if there were any performance indicators for the occupational exposure cornerstone that had not been reviewed. There were none to evaluate. This review represented one inspection sample.

#### b. Findings

No findings of significance were identified.

.4 Job-In-Progress Reviews

a. Inspection Scope

The inspectors evaluated selected jobs being performed in radiation areas, potential airborne radioactivity areas, and HRAs for observation of work activities that presented the greatest radiological risk to workers and included areas where radiological gradients were present (Section 2OS1.2). This involved work that was estimated to result in higher collective doses, and included condensate filter septa change-out, drain flushing in the reactor water clean-up heat exchanger room and other selected work areas.

The inspectors reviewed radiological job requirements including RWP and work procedure requirements, and attended As-Low-As-Is-Reasonably-Achievable (ALARA) job briefings. Job performance was observed with respect to these requirements to determine if radiological conditions in the work areas were adequately communicated to workers through pre-job briefings and radiological condition postings. This review represented one inspection sample.

The inspectors also evaluated the adequacy of radiological controls including required radiation, contamination and airborne surveys for system breaches, and entry into LHRAs and HRAs. Radiation protection job coverage, including direct visual surveillance by RP technicians along with remote monitoring, and teledosimetry systems, and contamination control processes, was evaluated to determine if workers were adequately protected from radiological exposure. This review represented one inspection sample.

Work in high radiation areas having significant dose rate gradients was observed to evaluate the application of dosimetry to effectively monitor exposure to personnel, and to determine if licensee controls were adequate. The inspectors observed and evaluated RP job coverage which required control of worker locations based on radiation survey data and real time monitoring using teledosimetry in order to maintain personnel radiological exposure ALARA. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.5 High Risk Significant, High Dose Rate High Radiation Area, and Very High Radiation Area Controls

a. Inspection Scope

The inspectors reviewed the licensee's procedures and practices for high risk, high dose rate HRAs, and for very high radiation area access to determine if workers were adequately protected from radiological overexposure. Discussions were held with radiation protection management concerning high dose rate HRA, and very high radiation area controls and procedures, including procedural changes that had occurred

since the last inspection. This was done to determine if any procedure modifications had substantially reduced the effectiveness and level of worker protection. This review represented one inspection sample.

The inspectors evaluated the controls including procedure PAP-0123; *Control of Locked High Radiation Areas*, Revision 9, that were in place for special areas that had the potential to become very high radiation areas during certain plant operations. Discussions were held with RP supervisors to determine how the required communications between the RP group and other involved groups would occur beforehand, in order to allow corresponding timely actions to properly post and control the radiation hazards. This review represented one inspection sample.

During plant walkdowns, the posting and locking of entrances to high dose rate HRAs, and very high radiation areas were reviewed for adequacy. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.6 Radiation Worker Performance

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation worker performance with respect to stated radiation protection work requirements. The inspectors also evaluated whether workers were aware of the significant radiological conditions in their workplace, the RWP controls and limits in place, and that their performance had accounted for the level of radiological hazards present. This review represented one inspection sample.

Radiological problem reports, which found that the cause of an event resulted from radiation worker errors, were reviewed to determine if there was an observable pattern traceable to a similar cause, and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.7 Radiation Protection Technician Proficiency

a. Inspection Scope

The inspectors observed and evaluated RP technician performance with respect to RP work requirements. This was done to evaluate whether the technicians were aware of the radiological conditions in their workplace, the RWP controls and limits in place, and

if their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities. This review represented one inspection sample.

Radiological problem reports, which found that the cause of an event was RP technician error, were reviewed to determine if there was an observable pattern traceable to a similar cause, and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

**Cornerstone: Public Radiation Safety**

2PS3 Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control Program (71122.03)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the most current Annual Environmental Monitoring Reports (2004 and 2005) and licensee assessment results to determine if the Radiological Environmental Monitoring Program (REMP) was implemented as required by the Radiological Environmental TSs (RETS) and the Offsite Dose Calculation Manual (ODCM). The inspectors reviewed the reports for changes to the ODCM with respect to environmental monitoring and commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and data analysis.

The inspectors reviewed the ODCM and the Annual Reports for 2004 and 2005 to identify environmental monitoring stations and their locations, evaluated licensee self-assessments, audits, and the licensee's vendor laboratory interlaboratory comparison program results. The inspectors reviewed the Updated Final Safety Analysis Report for information regarding the environmental monitoring program and meteorological monitoring instrumentation. The inspectors also reviewed the scope of the licensee's audit program to determine if it met the requirements of 10 CFR 20.1101c.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.



## .2 Onsite Inspection

### a. Inspection Scope

The inspectors walked down six of the air sampling stations (>30 percent) and approximately 20 percent of the thermoluminescent dosimeter monitoring stations to determine whether they were located as described in the ODCM and to determine the equipment material condition. This review represented one inspection sample.

The inspectors observed the collection and preparation of a variety of environmental samples including surface water and air. The environmental sampling program was evaluated to determine if it provided data that was representative of the release pathways as specified in the ODCM and that sampling techniques were performed in accordance with station procedures. This review represented one inspection sample.

From direct observations and record reviews, the inspectors determined if the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the annual report, NRC Safety Guide 23, and licensee procedures. The inspectors determined if the meteorological data readout and recording instruments, including computer interfaces and data loggers at the tower were operable; that readouts of wind speed, wind direction, delta temperature, and atmospheric stability measurements were available on the licensee's computer system, which was available in the Control Room, and that the system was operable. This review represented one inspection sample.

The inspectors reviewed each event documented in the Annual Environmental Monitoring Report that involved missed samples, inoperable samplers, lost thermoluminescent dosimeters, or anomalous measurements for the cause and corrective actions. The Annual Reports were reviewed for positive sample results (i.e., licensed radioactive material detected above the lower limits of detection) and the licensee's evaluation of the source of this material. This review represented one sample.

The inspectors reviewed the ODCM for significant changes resulting from modifications to the land use census or sampling station changes made since the last inspection. This included a review of technical justifications for changed sampling locations. The inspectors determined if the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment. This review represented one inspection sample.

The inspectors reviewed the calibration and maintenance records for five air samplers. There were no calibrations for composite water samplers. The inspectors reviewed calibration records for radiation measurement (counting room) instrumentation that could be used for environmental sample analysis and was used for the free release of liquids or pourable solids from the radiologically restricted area (RRA). This included determining if the appropriate detection sensitivities would be achieved for counting samples, in that the instrumentation could achieve the RETS/ODCM required

environmental lower levels of detection limits. The inspectors reviewed quality control data used to monitor radiation measurement instrument performance, and actions that would be taken if indications of degrading detector performance were observed.

The licensee does not perform radio-chemical analyses of REMP samples. The inspectors reviewed a licensee audit of the vendor laboratory that analyzed these samples. Corrective actions for deficiencies identified in the audit were evaluated along with the vendor's interlaboratory comparison program to determine if the vendor's analytical and quality assurance programs were adequate.

The inspectors reviewed quality assurance audit results of the program to determine whether the licensee met the TS/ODCM requirements. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.3 Unrestricted Release of Material From the Radiologically Restricted Area

a. Inspection Scope

The inspectors observed the access control location where the licensee monitored potentially contaminated material leaving the radiologically restricted area and inspected the methods used for the control, survey, and release of material from this area. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use to determine if the work was performed in accordance with plant procedures. This review represented one inspection sample.

The inspectors determined if the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources that represented the expected isotopic mix. The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material and determined if there was guidance on how to respond to an alarm indicating the presence of licensed radioactive material. The inspectors reviewed the licensee's equipment to determine if radiation detection sensitivities were consistent with the NRC guidance contained in IE Circular 81-07 and IE Information Notice 85-92 for surface contamination, and HPPOS-221 for volumetrically contaminated material. The inspectors determined if the licensee performed radiation surveys to detect radionuclides that decay via electron capture.

The inspectors reviewed the licensee's procedures and records to determine if the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters such as counting times and background radiation levels. The inspectors determined whether the licensee had established a "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

4. Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and Special Reports related to the REMP since the last inspection to determine if identified problems were entered into the corrective action program for resolution. The inspectors also determined if the licensee's self-assessment program was capable of identifying and addressing repetitive deficiencies or significant individual deficiencies that were identified by the problem identification and resolution process.

The inspectors also reviewed corrective action reports related to the REMP that affected environmental sampling and analysis, and meteorological monitoring instrumentation. Staff members were interviewed and documents were reviewed to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

- Initial problem identification, characterization, and tracking;
- Disposition of operability/reportability issues;
- Evaluation of safety significance/risk and priority for resolution;
- Identification of repetitive problems;
- Identification of contributing causes;
- Identification and implementation of effective corrective actions;
- Resolution of NCVs tracked in the corrective action system; and
- Implementation/consideration of risk significant operational experience feedback.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed reported 1st quarter 2006 data for the Unplanned Power Changes performance indicator using the definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 4. The inspectors reviewed station logs, event notification reports, and licensee event reports (LERs) to verify the accuracy of the licensee's data submission.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to determine whether they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed.

These reviews did not represent an inspection sample.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors reviewed monthly performance reports, self-assessments, quality assurance assessment reports, performance improvement initiatives and CRs to identify any trends that had not been adequately evaluated or addressed by proposed corrective actions.

These reviews did not represent an inspection sample.

b. Findings

No findings of significance were identified.

.3 Annual Sample Review - EDG Exhaust Plenum Modification Fasteners

a. Inspection Scope

The inspectors selected the licensee's root cause evaluation associated with an adverse trend of self-revealing hardware issues (i.e., loose bolting fasteners) identified in the EDG common exhaust plenum modification implemented during the 2005 refueling outage (RFO-10). The inspectors selected this issue for detailed review because the issue was associated with the cross-cutting issues of Problem Identification and Resolution, and Human Performance.

The inspectors determined whether: (1) the problems were accurately identified; (2) the root cause, apparent cause, and contributing causes were adequately justified; (3) extent of condition and generic implications were appropriately addressed; (4) previous occurrences were considered; and (5) corrective actions were appropriately focused to address the problem and corrective actions were implemented commensurate with the safety significance of the issue.

This review represented one inspection sample.

b. Findings and Observations

No findings of significance were identified. The licensee's root cause evaluation focused on the programmatic and organizational issues that resulted in process breakdowns during the design and implementation of modifications that introduced latent design issues into a modification intended to resolve a long-standing issue with the Testable Rupture Discs. The licensee's evaluation identified root and contributing causes, which included a lack of site ownership of the Engineering Change Process (ECP); the failure to understand the magnitude of the project; and unclear roles for the management sponsor, issue owner, and project manager.

The inspectors determined that the licensee's planned and implemented corrective actions appeared to be reasonable and appropriate to address the identified root and contributing causes. The corrective actions were designed to strengthen the site's ownership of modifications to safety-related and/or risk-significant systems through procedure changes focused on improving the implementation of the ECP, and through the assignment of an appropriate senior management sponsor, project manager, and cross-functional team.

.4 Annual Sample Review - Operator Workarounds

a. Inspection Scope

During the week ending May 19, 2006, the inspectors performed a semi-annual review of the cumulative effects of operator workarounds (OWAs). The list of open OWAs was reviewed to identify any potential effect on the functionality of mitigating systems. Inspection activities included, but were not limited to, a review of the cumulative effects of the OWAs on the availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents. Additionally, the inspectors conducted a review of recent CRs to ensure that OWA related issues were entered into the corrective action program when required.

This review represented one inspection sample.

b. Findings and Observations

No findings of significance were identified.

.5 Annual Sample Review - Motor Control Center, Switchgear, and Electrical Equipment Area "B" Return Fan Motor Failure

a. Inspection Scope

The inspectors selected the licensee's root cause evaluation associated with the Motor Control Center, Switchgear, and Electrical Equipment Area "B" Return Fan Motor failure that occurred on February 11, 2006, and resulted in a fire and an Alert emergency declaration. The inspectors selected this issue for detailed review because the issue was associated with the cross-cutting area of Human Performance.

The inspectors determined whether: (1) the problems were accurately identified; (2) the root cause, apparent cause, and contributing causes were adequately justified; (3) extent of condition and generic implications were appropriately addressed; (4) previous occurrences were considered; and (5) corrective actions were appropriately focused to address the problem and corrective actions were implemented commensurate with the safety significance of the issue.

In addition, the inspectors interviewed licensee operators that responded to the indications of the impending motor failure to determine whether operator actions to identify, classify, and prioritize the problem were timely and commensurate with its significance and ease of discovery.

This review represented one inspection sample.

b. Findings and Observations

No findings of significance were identified. The licensee's evaluation focused on the fan motor failure mechanisms and the reasons that personnel did not predict and prevent the motor failure. The licensee's evaluation identified several root and contributing causes that included: (1) lack of commitment to program improvement, which affected the maintenance program and contributed to an incorrect assembly of the fan motor in February 2005; and (2) inadequate communications within the organization, which contributed to the inadequate implementation of the predictive maintenance program.

The licensee also evaluated the control room operator response to an unusual noise, heard by the shift manager in the control room about 30 minutes prior to motor failure, to determine whether operators had the opportunity to identify a problem with the motor and prevent the motor failure. The fan motor was located one level immediately above the control room. The licensee concluded that the timeliness of operator response was satisfactory because the initial unusual noise heard by the shift manager was barely audible and nonspecific, was not heard by other operators, and due to the rapid nature of the failure did not become reasonably apparent to the control room staff until immediately prior to the motor failure. The motor failed as an operator, who was dispatched to investigate the noise, entered the room where the motor was located.

#### 4OA3 Event Followup (71153)

- .1 (Closed) LER 05000440/2006-001-00: Incorrect Wiring in the Remote Shutdown Panel Results in a Fire Protection Program Violation.

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," when licensee personnel failed to correct a test deficiency associated with the remote shutdown circuit, which allowed a latent wiring error to exist from September 9, 2003, until January 17, 2006.

Description: On September 9, 2003, licensee personnel conducted surveillance testing of the RCIC remote shutdown circuitry. While conducting an inspection of this activity, the inspectors identified that licensee personnel failed to verify that the RCIC remote shutdown control circuit and transfer switch was capable of performing one of its intended functions because the control room isolation function was not specifically tested as required (NCV 05000440/2003010-02).

As part of their corrective actions, licensee personnel planned to revise the RCIC remote shutdown surveillance procedure to include a verification of the control room isolation function. On January 17, 2006, SVI-C61-T1200, "Remote Shutdown Control Test - RCIC and RHR," Revision 3, was generated, which included steps to verify the operation of the control switch contacts that isolated the control room circuitry. Licensee personnel tested the circuit on that same day using the revised procedure, but were unable to demonstrate operation of the control room isolation function because a jumper in the remote shutdown panel was wired incorrectly. Specifically, the control circuit for RCIC turbine exhaust valve 1E51F068 was wired such that complete isolation from the control room circuitry did not occur. As such, the exhaust valve had the potential for spurious operation, which could have resulted in RCIC unavailability due to a fire induced hot short. The licensee corrected the wiring error and conducted an extent of condition review, which did not reveal any additional deficiencies. The licensee determined that the wiring error most likely occurred during pre-operational testing in 1985. The licensee identified that the wiring error was a violation of the paragraph 2.C.6, "Fire Protection," of the Perry Operating License.

The inspectors noted that more than 2 years had passed between the identification of the testing deficiency and the implementation of corrective actions that resolved the issue. The inspectors also noted that the licensee had several opportunities, including a refueling outage in 2005, to identify and correct the deficiency. Furthermore, on January 17, 2006, licensee personnel demonstrated that the testing could be performed with the plant online. Therefore, the inspectors concluded that the licensee did not correct the test deficient condition in a timely manner. As a consequence, the latent wiring error that affected the control room isolation function of the RCIC remote shutdown circuit remained unaddressed for over 2 years. The failure to promptly correct the deficiency affected the reliability of the RCIC system during a control room fire scenario.

Analysis: The inspectors determined that the failure to promptly correct the deficient test of the RCIC remote shutdown circuit was a performance deficiency warranting a



significance evaluation. The inspectors concluded that the finding was greater than minor in accordance with Appendix B, "Issue Screening," of IMC 0612, "Power Reactor Inspection Reports," dated September 30, 2005. Specifically, the finding was associated with the equipment performance attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The failure to promptly correct the deficient testing condition of the RCIC remote shutdown circuit allowed a latent wiring error to unnecessarily remain in place for an extended period of time that affected the reliability of the RCIC system during a control room fire scenario. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution because licensee personnel failed to appropriately evaluate the significance of the issue when the test deficiency was identified and therefore failed to appropriately prioritize and implement corrective actions in a timely manner. The licensee's root cause evaluation identified that less than adequate understanding of fire protection related design functions of the remote shutdown system was a causal factor that contributed to the failure to adequately evaluate the significance of the issue and resulted in inappropriate action to address the issue. Specifically, licensee personnel failed to obtain sufficient facts and evidence prior to decision making and based corrective action decisions on erroneous assumptions that test requirements were being met.

The inspectors performed a Significance Determination Process (SDP) Phase 1 analysis using IMC 0609, Appendix A, and determined that the finding degraded a fire protection defense-in-depth strategy involving a post-fire safe shutdown system. Appendix A directed the inspectors to IMC 609, Appendix F, "Fire Protection Significance Determination Process." Because Appendix F did not include explicit treatment of fires in the main control room or fires leading to main control room abandonment, the inspectors consulted the Region III Senior Reactor Analyst (SRA) for guidance. The SRA performed an SDP Phase 3 analysis using information from IMC 0609, Appendix F, "Fire Protection Significance Determination Process." A fire in one of two electrical control cabinets in the main control room could cause a hot short and result in spurious operation of the RCIC turbine exhaust valve. The closure of this valve would render RCIC inoperable from both the control room and the remote shutdown panel. This fire would also affect the function of the low pressure core spray system. However, the HPCS system, the two trains of the RHR low pressure core injection system and the non-ADS (automatic depressurization system) safety relief valves remained available as mitigating systems. The frequency of a fire in one of the two control cabinets was estimated to be  $1.2\text{E-}4$  using the fire frequencies of general control cabinets from Appendix F. Control room evacuation was assumed to occur due to the smoke generated from the fire and no credit for suppression prior to damage was given. The probability of a spurious operation was estimated to be 0.6. Because HPCS remained available as a safe shutdown path, the screening unavailability factor of  $1.0\text{E-}2$  from Step 2.1 of Appendix F was applied. This was conservative because additional equipment also remained available. Considering the low frequency of fires in the control room and the remaining mitigating capability, the SRA determined that the risk associated with this finding was less than  $1.0\text{E-}6$ . Therefore, the finding was determined to be of very low safety significance (Green).



Enforcement: 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that conditions adverse to quality, such as deficiencies, deviations, and nonconformances are promptly identified and corrected. Contrary to this requirement, on September 9, 2003, it was identified that a testing deficiency existed for the control room isolation function of the RCIC remote shutdown control circuit such that the isolation function was not tested (NCV 05000440/2003010-02). The licensee failed to correct the deficient condition in a timely manner and, as a result, allowed a latent wiring error to exist until January 17, 2006, when the error was identified through an adequate test and the circuit was repaired. The wiring error adversely affected the reliability of the RCIC system during a control room fire scenario. However, because of the very low safety significance of the issue and because the issue has been entered into the licensee's corrective action program (CR 06-00238), the issue is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000440/20060003-02).

This review represented the first of three samples for this inspection procedure.

.2 (Closed) Licensee Event Report (LER) 0500440/2006-002-00: "Scaffold Built in the Containment Pool Swell Region."

On January 25, 2006, licensee personnel identified that on December 8 and 28, 2005, scaffolding was erected to support maintenance activities in the containment pool swell region without an adequate evaluation. An engineering seismic evaluation and probabilistic risk assessment were performed; however, licensee personnel failed to analyze for pool swell hydrodynamic missile hazards as a result of a design basis loss-of-coolant accident (LOCA). This resulted in the plant being in an unanalyzed condition for about 15 hours. An existing licensee calculation, PSA-009, Revision 3, addressed potential missiles within the containment pool swell region during a LOCA and calculated an acceptable total duration for allowable work in the pool swell region of 125 hours per year. The duration of the work in the pool swell region did not exceed this limit. The licensee determined the cause of the event to be the gradual removal of requirements from existing procedures following a 2001 change to 10 CFR 50.59. Corrective actions included the issuance of an Operations Standing Order to disallow scaffolding in the pool swell region until a procedure revision was implemented, as well as revisions to associated procedures. No new findings were identified during the inspectors' review. This issue was determined to be of minor significance and is therefore not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee documented the issue in CR 06-00422. This LER is closed.

This review represented the second of three samples for this inspection procedure.

.3 Earthquake

On June 20, 2006, a minor earthquake measuring 3.4 on the Richter scale occurred and was centered in Lake Erie about 3 miles northwest of the plant. The inspectors responded to the control room and observed the licensee's classification of the event and the licensee's actions in response to the event. The licensee's actions included walkdowns of the plant by licensee personnel and samples of the plant drain system.

The inspectors conducted confirmatory walkdowns in safety significant areas of the plant. The inspectors determined that the licensee completed notifications as required by 10 CFR Part 72. No findings of significance were identified.

This review represented the third of three samples for this inspection procedure.

- .4 (Closed) Unresolved Item 440/2005005-02: This URI was issued on an apparent inadequate operability evaluation for breakers at the Perry Plant. In January of 2005, the licensee completed an operability evaluation to account for several breaker maintenance and performance deficiencies. The operability evaluation was performed to justify the continued use of safety-related breakers until appropriate testing, repairs or preventive maintenance could be completed or the breakers could be refurbished or replaced. At the time, the inspectors noted that the evaluation did not account for extent of condition of these failures and did not include all potential failure modes. The inspectors concluded that the evaluation was incomplete and further review was necessary after the licensee completed its investigation.

During this inspection period, the inspectors reviewed the completed operability evaluation and the actions taken by the licensee. The licensee had completed vendor recommended preventative maintenance on the breakers and did not identify problems that had resulted in previous failures. These causes included control device gap settings, hardened or improper breaker lubrication, indentation of the timing lever, clearance concerns between the operating mechanism and cubicle or elongated mounting holes on the control device holding plate or other problems noted as potential failure modes by the originating inspectors. In addition, as found conditions were noted on breakers that were tested or refurbished.

No significant problems were found. The inspectors concluded that the original operability evaluation, though incomplete with respect to addressing some potential failure modes and extent of conditions, adequately addressed operability of the breakers. The inspectors determined that no performance deficiencies or violations of regulatory requirements were identified and no additional enforcement action was warranted. No findings were identified and the inspector had no further concerns in this area. This unresolved item is closed.

#### 4OA6 Meetings

##### Exit Meetings

On June 8, 2006, an interim exit meeting was conducted that presented the inspection results of the NRC's review of access controls to radiologically significant areas, the radiological environmental monitoring program, and radioactive material control program with Mr. L. Pearce, Site Vice President.

On June 23, 2006, the resident inspectors presented the quarterly inspection results to Mr. L. Pearce and other members of his staff.

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

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee Personnel

L. Pearce, Vice President-Nuclear  
F. von Ahn, General Manager, Nuclear Power Plant Department  
J. Shaw, Director, Engineering  
M. Wayland, Director, Maintenance  
J. Messina, Manager, Operations  
S. Thomas, Manager, Radiation Protection  
J. Lausberg, Manager, Regulatory Compliance  
J. Balstad, Chemistry Supervisor  
J. Oelbracht, Chemistry Supervisor  
K. Russell, Regulatory Affairs

### **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

#### Opened and Closed

05000440/2006003-01	FIN	Failure to Promptly Complete Hot Weather Preparations (Section 1R01)
05000440/2006003-02	NCV	Failure to Promptly Correct a Testing Deficiency Affecting a RCIC Remote Shutdown System Function (Section 4OA3.1)

#### Closed

05000440/2006-001-00	LER	Incorrect Wiring in the Remote Shutdown Panel Results in a Fire Protection Program Violation (Section 4OA3.1)
05000440/2006-002-00	LER	Scaffold Built in the Containment Pool Swell Region (Section 4OA3.2)
05000440/2005005-02	URI	Operability Evaluation of Safety-Related Breakers Requires Further Review

#### Discussed

05000440/2005006-01	FIN	Untimely Hot Weather Preparations (Section 1R01)
05000440/2003010-02	NCV	Failure To Verify Component Operability During System Restoration Following Remote Shutdown System Surveillance Testing (Section 4OA3)

## **LIST OF DOCUMENTS REVIEWED**

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

### **Section 1R01 Adverse Weather Protection**

CR 03-03338; RFO9 Extension Causing Seasonal Readiness Preps to be Delayed Beyond 6/1/03; dated May 18, 2003  
CR 05-03742; Summer Preparations Not in Compliance with NOBP-WM-2301; dated April 24, 2005  
CR 06-02662; CAS [Central Alarm Station] Backup HVAC [Heating, Ventilation, and Air Conditioning] Unit Replacement Did Not Meet Summer Prep Milestone; dated June 13, 2006  
Perry Summer Preparation Order 2006 Work List Developed on June 7, 2006  
WO 200103432; Service Building HVAC Supply; dated June 13, 2006  
WO 200169921; HVAC Condensing Unit; dated June 13, 2006  
WO 200152759; Service Building Machine Shop; dated June 13, 2006  
WO 200145924; Circulating Water Pump House Wall Louvers; dated June 13, 2006  
WO 200145923; Circulating Water Pump House Wall Louvers; dated June 13, 2006

### **Section 1R04 Equipment Alignment**

VLI-M25/26; Control Room HVAC and Emergency Recirculation System; Revision 7  
CR 06-01686; Chilled Water Valve Not Positioned Per Controls for Control Room HVAC B; dated April 13, 2006  
VLI-E22A; High Pressure Core Spray System; Revision 6  
VLI-E51; Reactor Core Isolation Cooling System; Revision 7

### **Section 1R05 Fire Protection**

CR 05-07014; NRC Identified Condition; dated October 4, 2005  
CR 06-02602; PY-C-06-02 Division 2 D/G [Emergency Diesel Generator] Area May Not Meet USAR 9A.5 for Fire Fighting After SSE [Safe Shutdown Earthquake]; dated June 8, 2006  
FPI-0CC; Control Complex; Revision 5  
FPI-0IB; Intermediate Building; Revision 4  
FPI-1DG; Unit 1 - Division 2; Revision 4  
PAP-1910; Fire Protection Program; Revision 12  
USAR Volume 13, Section 9A; Fire Protection Evaluation Report; Revision 5, dated November 1985

### **Section 1R06 Flood Protection**

CR 06-02355; RW [Radioactive Waste] Sumps CNTMT [Containment] Penetration EQ [Equipment Qualification] Question; dated May 25, 2005  
CR 06-02501; Contaminated Water Found Around TP568 Floor Drain; dated June 1, 2006  
CR 06-02527; Floor Drain in RWCU [Reactor Water Cleanup] Heat Exchanger Room Partially Clogged; dated June 5, 2006

CR 06-02626; Valve Internals Missing; dated June 7, 2006  
USAR Volume 14, Section 11.2; Liquid Waste Management Systems; Revision 12, dated January 2003  
USAR Volume 12, Section 9.3.3; Equipment and Floor Drainage Systems; Revision 12, dated January 2003

#### **Section 1R11 Licensed Operator Requalification**

OTLC-3058200608-PY-SGC2; Simulator Guide, Cycle 11 Evaluation, Scenario C2; Revision 0

#### **Section 1R12 Maintenance Effectiveness**

CR 05-00293; OE 19025 - Reactor Water Clean-up Backwash Tank Overflowed - Re-issue; dated January 13, 2005  
CR 05-04296; NRC Information Notice 05-11; dated May 16, 2005  
CR 05-06564; MOV [Motor-Operated Valve] 1E12F0027A Valve Weak Link; dated September 12, 2005  
CR 06-00004; Waterleg Pump Oil Leaks; dated December 31, 2005  
CR 06-01063; Inoperability Time For RHR Pump B Due To Momentary Low Discharge Perry Pressure; dated March 3, 2006  
CR 06-02308; RHR B Minimum Flow Valve Opening During SVI-E12T2002; dated May 22, 2006  
System Health Report 2005-3; dated December 29, 2005  
Perry System Health Report 2005-4; dated March 3, 2006  
Perry System Health Report 2006-1; dated May 8, 2006  
SVI-E12-T2002; RHR B Pump and Valve Operability Test; Revision 21  
USAR Volume 14, Section 11.2; Liquid Waste Management Systems; Revision 12, dated January 2003  
USAR Volume 12, Section 9.3.3; Equipment and Floor Drainage Systems; Revision 12, dated January 2003

#### **Section 1R13 Maintenance Risk Assessments and Emergent Work Control**

Control Room Operator Logs; dated April 3, 2006, through April 7, 2006  
On-Line Probabilistic Risk Assessment; Period 5 Week 4; Revision 1  
On-Line Probabilistic Risk Assessment; Period 5 Week 10; Revision 2  
PAP-1924; Risk-Informed Safety Assessment and Risk Management; Revision 4  
PYBP-POS-2-2; Division 3 Outage (Yellow) Protected Equipment Posting Checklist; Revision dated September 13, 2004  
PYBP-POS-2-2; RCIC Outage (Yellow) Protected Equipment Posting Checklist; Revision dated September 13, 2004  
PYBP-POS-2-2; Motor Feed Pump Outage (Yellow) Protected Equipment Posting Checklist; Revision dated September 13, 2004  
PYBP-POS-2-2; Division 1 Diesel Generator Outage (Yellow) Protected Equipment Posting Checklist; Revision dated September 13, 2004

#### **Section 1R14 Operator Performance During Non-Routine Evolutions and Events**

Control Room Logs; dated May 29, 2006  
CR 06-02249; Smoke Observed Coming Out of a Light in the TEC [Training and Education Center] Auditorium; dated May 17, 2006

CR 06-02413; Unplanned Impairment for TSC [Technical Support Center] Halon Suppression and Detection; dated May 29, 2006  
EPI-A1; Emergency Action Levels; Revision 16  
IOI-3; Power Changes; Revision 26  
ONI-P54; Fire; Revision 13  
PSI-0008; Determining the Availability of the Perry Plant On-site Emergency Response Facilities; Revision 2  
PAP-1910; Fire Protection Program; Revision 12

### **Section 1R15 Operability Evaluations**

CR 06-01178; Rejection of #2 Fuel Oil - Fuel Oil Didn't Match the P.O. #7116494; dated March 13, 2006  
CR 06-01551; Fuel Oil Additive May Cause Filter Plugging Issues; dated April 5, 2006  
CR 06-01564; Functionality of Existing Safety Related Bldg. Waterstops; dated April 5, 2006  
CR 06-01647; Oil Leak on RCIC Turbine; dated April 11, 2006  
CR 06-01685; NRC Identified Oil Leak on RCIC Turbine; dated April 13, 2006  
CR 06-01898; SVI-E22-T2004, 1E22-F0002 Failed to Exercise Close; dated April 29, 2006  
CR 06-02454; NRC Identified Past Operability Concern; dated May 31, 2006  
Drawing D-415-041; Fuel Handling Building Mat Elevation 574'-10" (West); Revision F  
Drawing D-415-042; Fuel Handling Building Mat Elevation 574'-10" (East); Revision H  
Drawing D-413-062; Intermediate Building Mat Elevation 574'-10" (North); Revision K  
Drawing D-413-225; Intermediate Building Floor Elevation 585'-0"; Current revision as of April 7, 2006  
REC-0104; Chemistry Specifications; Revision 18  
SVI-E22-T2004; HPCS Pump Suction Check Valves Operability Test (1E22-F002, 1E22-F016); Revision 8

### **Section 1R17 Permanent Modifications**

ECP 04-0295; Feed Booster Pump Strainer Basket Modification; Revision 1  
WO 200119629; Feedwater Booster Pump Suction Strainer; dated May 18, 2005

### **Section 1R19 Post-Maintenance Testing**

CR 06-01508; Division II DG [Diesel Generator] Room Supply Fan 2B PMT [Post-Maintenance Test] Failed As Written and Required Minor Change; dated March 31, 2006  
CR 06-00225; Leak Found on Division 1 D/G Jacket Water Pump; dated January 16, 2006  
CR 06-02137; Receipt of FCV [Flow Control Valve] B HPU [Hydraulic Power Unit] Needs Maintenance Alarms During Fill and Vent Activities; dated May 11, 2006  
Beta Laboratory Failure Analysis Report; Reactor Re-Circulating HPU Pilot Line Weld Defect; dated May 10, 2006  
FTI-F0036; Post-Maintenance Test Manual; Revision 3  
WO 200093304; Division 2 DG Room Supply Fan 2B; dated April 7, 2006  
WO 200174501; Division 3 HPCS EDG Oil Cooler Leak; dated May 4, 2006  
WO 200194425; Division 1 EDG Jacket Water Pump; dated April 28, 2006  
WO 200205573; Overhaul Spare Actuator and Install; dated April 23, 2006  
WO 200213803; MFP Low Flow Control Valve; dated June 14, 2006



## **Section 1R20 Refueling and Outage Activities**

CR 06-02139; Offgasing of Fyrquel In Drywell; dated May 11, 2006  
CR 06-02142; Loose Wire Noted Below Reactor Recirculating Flow Control Valve "B" with Ray Chem On It; dated May 11, 2006  
CR 06-02144; B33 Forced Outage - 2 Hour Delay During Performance of PMI-0116; dated May 11, 2006  
IOI-3; Power Changes; Revision 26  
IOI-4; Shutdown; Revision 11  
Outage Control Center Log; dated May 8, 2006  
Perry Work Implementation Schedule; Week 5, Period 5

## **Section 1R22 Surveillance Testing**

CR 05-07839; Emergency Closed Cooling Pump A; dated December 1, 2005  
CR 05-07841; Emergency Closed Cooling Pump A and B; dated December 1, 2005  
CR 06-00467; Suspect Tube Clamps on Division 1 and Division 2 Diesel Engine; dated January 31, 2006  
CR 06-00803; RTD [Resistance Temperature Detector] for Division 1 DG Generator Pedestal Bearing is Giving High Readings; dated February 16, 2006  
CR 06-01645; NRC Identified Items; dated April 11, 2006  
CR 06-01705; Reactor Core Isolation Cooling Turbine Lube Oil Leak; dated April 13, 2006  
CR 06-02308; RHR B Minimum Flow Valve; dated May 22, 2006  
SVI-B21-T0369-F; SRV [Safety Relief Valve] and Low-Low Set Pressure Actuation Channel Functional for 1B21-N668F; Revision 8  
SVI-C51-T0030-C; APRM C Channel Calibration for 1C51-K605C; dated December 11, 2003  
SVI-E12-T2002; RHR B Pump and Valve Operability Test; Revision 21  
SVI-E51-T2001; RCIC Pump and Valve Operational Test; Revision 24  
WO 200164792; Emergency Closed Cooling System "A" Pump and Valve Operability; dated April 17, 2006  
WO 200191790; Diesel Generator Start and Load Division 1; dated April 19, 2006

## **Section 2OS1 Access Control to Radiologically Significant Areas**

RWP 060403 and ALARA Plan; 1G33B0002A, NRHX Sealant Injection Of Clamp; Revision 1  
RWP 060317; Condensate Demineralizer Septa Filter Change-Out; Revision 0  
RWP 060304; Maintenance Activities, Isolock Sample Valve Change-Out; Revision 0  
PAP-0123; Control of Locked High Radiation Areas; Revision 9  
FTI-A0017; Non-SNM Pool Inventory Mechanism And Pool Inventory Log; Revision 1  
PY-C-06-01; ALARA Committee Observations; dated March 24, 2006  
PY120062021; Observation Of RP Control Point And The Fuel Handling Bldg; dated March 24, 2006  
PY120051879; Observation Of RP Brief And Coverage Of Seal Injection For The MSR; dated October 27, 2005  
PY-C-05-03; Quarterly Audit; dated November 23, 2005  
CR 05-07228; Potential LHRA Control Issue; dated December 4, 2005  
CR 05-07308; Unnecessary Challenge To Station Programs Due To Inadequate Work Coordination; dated December 9, 2005  
CR 05-07384; Inconsistent Use Of Pre-Job Briefs; dated December 10, 2005  
CR 06-01703; Feedwater Venturi Work Adds Emergent Dose; dated April 14, 2006  
CR 06-01812; Failures Of Telemetry Transmitters; dated May 24, 2006

CR 06-02103; HRA Sign Found On Floor; dated May 11, 2006  
CR 06-01901; Accessibility To A LHRA; dated May 31, 2006  
CR 06-02302; LHRA Gate Found In Alarm; dated June 8, 2006  
CR 06-00686; Elemental Cobalt Being Introduced To RX Vessel Via 5 and 6 FW [Feedwater] Heater Drains; dated February 12, 2006

### **Section 2PS3 Radiological Environmental Monitoring Program and Radioactive Material Control Programs**

NUPIC Joint Audit Survey Of Environmental, Inc. 19238; dated January 18, 2006  
PY-C-05-02; Audit Report, REMP; dated April 22, 2005  
Perry Annual Environmental And Effluent Release Report For 2004  
Perry Annual Environmental And Effluent Release Report For 2005  
Perry Offsite Dose Calculation Manual; Revision 14  
Meteorological Report For 2005  
PY120051766; Weekly Air Sample Collections; dated July 20, 2005  
PY120051673; Review Of Annual Environmental And Effluent Release Report; dated April 22, 2005  
PY120061988; Observations Of REMP Milk Sampling; dated February 8, 2006  
Air Sampler Maintenance And Calibration: Pump 5628; dated April 19, 2006  
Air Sampler Maintenance And Calibration: Pump 5632; dated April 19, 2006  
Gamma Spectroscopy QA Data For 2005-2006  
LLD [Lower Limit of Detection] Verifications For Germanium Detectors  
CR 05-05129; Reduction Of Budget Dollars For REMP Sample Analyses; dated May 31, 2005  
CR 05-06485; Vegetation Growth Adjacent REMP Air Samplers; dated September 7, 2005  
CR 05-03529; REMP Food Product Seed Distribution Date Not Met; dated April 18, 2005  
CR 06-02073; Calibration Of Gamma Spectroscopy Instruments Is Not IAW [In Accordance With] Procedure; dated May 8, 2006  
HPI-H0004; Identification Of Radioactive Materials And Release Of Material From RRAs; Revision 11

### **Section 4OA2 Identification and Resolution of Problems**

CR 06-00670; Fire In Control Complex Due To CC Miscellaneous Ventilation Fan 2B; dated February 11, 2006  
CR 06-00834; Timeliness Observation Root Cause Investigation Assignment Delay Trend; dated February 20, 2006  
CR 06-00871; Observation Adverse Trend Involving Human Performance and Resulting ONI [Off-Normal instruction] Entry; dated February 22, 2006  
CR 06-01588; NRC Question on Root Cause CR 06-00670, Fire In Control Complex; dated April 7, 2006  
CR 05-07873 Root Cause Analysis Report; Adverse Trend - EDG Exhaust Modification (PY-C-05-04); dated February 13, 2006  
CR 05-07895 Investigation Summary; EDG Exhaust Modification; dated March 15, 2006  
FTI-F0028; MOV Tracking and Trending; Revision 1  
Motor Operated Valve Program Report; Cycle 10; dated March 12, 2006  
NOBP-LP-2018; Integrated Performance Assessment/Trending; Revision 1  
Perry Performance Improvement Initiative Phase 2; Performance Indicators; February 2006



### **Section 4OA3 Event Followup**

Control Room Operator Logs; dated February 11, 2006

Control Room Operator Logs; dated June 20, 2006

CR 06-00238; Plant Wiring Incomplete In 1C61P001 Remote Shutdown Panel; dated January 17, 2006

CR 06-02097; CNRB Observation on SCAQ [Significant Condition Adverse to Quality]

CR 06-00422; Scaffolding in Pool Swell Region; dated May 10, 2006

Calculation PSA-009; (a)(4) Assessment for Work Within the Containment Swell Region; Revision 3

LER 2006-001; Incorrect Wiring in the Remote Shutdown Panel Results in a Fire Protection Program Violation; dated March 19, 2006

LER 2006-002; Scaffold Built in the Containment Pool Swell Region; dated March 24, 2006

ONI-D51; Earthquake; Revision 10

PYBP-DES-0001; On-Line Risk Assessment Reference Guide - Attachment 8 "Non-Quantified Risk Factors Evaluation Form"; Revision 6

## LIST OF ACRONYMS USED

ADS	automatic depressurization system
ALARA	As Low As Is Reasonably Achievable
CFR	<u>Code of Federal Regulations</u>
CR	condition report
ECP	Engineering Change Process
EDG	Emergency Diesel Generator
FENOC	FirstEnergy Nuclear Operating Company
FPI	Fire Protection Instruction
HPCS	high pressure core spray
HRA	High Radiation Area
HVAC	heating, ventilation, and air conditioning
IMC	Inspection Manual Chapter
LER	Licensee Event Report
LHRA	Locked High Radiation Area
NCV	non-cited violation
NEI	Nuclear Energy Institute
NOP	Normal Operating Procedure
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
ONI	Off-Normal Instruction
OWA	operator workaround
PAP	Perry Administrative Procedure
PMT	post-maintenance testing
RCIC	reactor core isolation cooling
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Environmental Technical Specifications
RHR	residual heat removal
RP	Radiation Protection
RRA	Radiologically Restricted Area
RWP	Radiation Work Permit
SDP	significance determination process
SSC	structures, systems, and components
SVI	surveillance instruction
TI	temporary instruction
TS	Technical Specification
USAR	Updated Safety Analysis Report
VLI	valve lineup instruction
WO	work order