UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

July 24, 2008

EA-08-125

Mr. Mark Bezilla
Site Vice President
FirstEnergy Nuclear Operating Company
Perry Nuclear Power Plant
P. O. Box 97, 10 Center Road, A-PY-290
Perry, OH 44081-0097

SUBJECT: PERRY NUCLEAR POWER PLANT NRC INTEGRATED INSPECTION REPORT 05000440/2008003

Dear Mr. Bezilla:

On June 30, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Perry Nuclear Power Plant. The enclosed report documents the inspection findings which were discussed on July 14, 2008, with 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 June of 2008, the NRC reviewed Perry operational performance, inspection findings, and performance indicators for the first quarter of 2008. Based on this review, we concluded that Perry was operating safely.

Based on the results of this inspection, one NRC-identified finding of very low safety significance was identified (green). Additionally, four licensee-identified violations are listed in Section 4OA7 of this report. However, because of the very low safety significance and because the issues were entered into your corrective action program, the NRC is treating these issue as non-cited violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of any non-cited violation in this report, 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 copies 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 NRC Resident Inspectors' 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 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/

Jamnes L. Cameron, Chief
Reactor Projects Branch 6

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

Enclosure: Inspection Report 05000440/2008003
w/Attachment: Supplemental Information

cc w/encl: J. Hagan, President and Chief Nuclear Officer - FENOC
J. Lash, Senior Vice President of Operations and
Chief Operating Officer - FENOC
D. Pace, Senior Vice President, Fleet Engineering - FENOC
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Director, Fleet Regulatory Affairs - FENOC
Manager, Fleet Licensing - FENOC
Manager, Site Regulatory Compliance - FENOC
D. Jenkins, Attorney, FirstEnergy Corp.
Public Utilities Commission of Ohio
C. O'Claire, State Liaison Officer, Ohio Emergency Management Agency
R. Owen, Ohio Department of Health

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SUBJECT: PERRY NUCLEAR POWER PLANT NRC INTEGRATED INSPECTION REPORT 05000440/2008003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-440
License No:	NPF-58
Report No:	050000440/2008003
Licensee:	FirstEnergy Nuclear Operating Company (FENOC)
Facility:	Perry Nuclear Power Plant, Unit 1
Location:	Perry, Ohio
Dates:	April 1, 2008, through June 30, 2008
Inspectors:	M. Franke, Senior Resident Inspector M. Wilk, Resident Inspector T. Taylor, Reactor Engineer R. Murray, Reactor Engineer M. Phalen, Health Physicist G. Wright, Project Engineer
Observers:	R. Leidy, Ohio Department of Health
Approved by:	J. Cameron, Chief Branch 6 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000440/2008003; 04/01/2008 – 06/30/2008; Identification and Resolution of Problems

The inspection was conducted by resident and regional inspectors. The report covers a three-month period of resident inspection. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609 "Significance Determination Process" (SDP). Findings for which the SDP 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 4, dated July 2006.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Initiating Event

- Green The inspectors identified a finding of very low safety significance for the failure of licensee personnel to adhere to corrective action program procedures. Specifically, during inspection of the linear velocity transducer connector for the 'A' flow control valve actuator, the connector was found in a degraded state, and personnel applied tape to the connector. Licensee personnel did not initiate a condition report to address this condition or to assess operability, and the connector later failed causing reactor flow and power oscillations. The licensee entered the issue of failure to adhere to corrective action program procedures into their corrective action program. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution because the organization failed to properly identify issues related to nuclear safety P.1(a).

  This finding was considered more than minor because it was associated with the equipment performance 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 determined through a Significance Determination Process analysis to be of very low safety significance because no mitigation equipment or functions were affected. No violation of NRC requirements occurred. (Section 4OA2)

B. Licensee-Identified Violations

Three violations of very low safety significance that were identified by the licensee have been reviewed by the inspectors. Additionally, one violation of very low safety significance, which was identified by the licensee and was the subject of an investigation by the NRC Office of Investigations (OI) was also reviewed. Corrective actions planned or taken by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

The plant began the inspection period at 100 percent power. On April 3, 2008, operators reduced power in preparation for a planned outage to repair a hotwell pump discharge valve. Shortly after midnight on April 4, 2008, operators removed the main generator from the grid and shutdown the reactor. Following repair of the hotwell valve and other maintenance activities, operators placed the plant in Mode 2 on April 11, 2008. Operators then returned the plant to Mode 4 to replace a refueling bridge electrical switch that failed and prevented rod withdrawal. Following repair of the switch, operators recommenced plant startup. The plant returned to power operations on April 12, 2008. The plant reached 100 percent power on April 18, 2008.

Between June 5 and June 10, 2008, operators maneuvered reactor power to as low as 93 percent to maintain condenser operations during a period of hot weather. At the end of the inspection period, on June 30, 2008, the plant was at 100 percent power.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Readiness of Offsite and Alternate AC Power Systems

a. Inspection Scope

During the week of May 19, 2008, the inspectors verified that plant features and procedures for operation and continued availability of offsite and alternate AC power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator (TSO) and the plant to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- coordination between the TSO and the plant during off-normal or emergency events;
- explanations for the events;
- estimates of when the offsite power system would be returned to a normal state; and
- notifications from the TSO to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to or during adverse weather conditions. Specifically, the inspectors verified that the procedures addressed the following:

- actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant would not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;
- compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;
- re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- communication between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

Documents reviewed are listed in the Attachment to this report. The inspectors also reviewed corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures.

This inspection constitutes one readiness of offsite and alternate AC power systems sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings of significance were identified.

.2 Summer Seasonal Readiness Preparations

a. Inspection Scope

During the week of June 2, 2008, the inspectors performed a review of the licensee's preparations for summer weather for selected systems, including conditions that could lead to an extended drought as a result of high temperatures.

During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the Attachment. The inspectors also reviewed CAP items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- turbine building closed cooling (TBCC) system, and
- control complex chilled water (CCCW) system.

This inspection constitutes one seasonal adverse weather sample as defined in IP 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- emergency closed cooling water (ECCW) 'B' during a Division 1 work week on May 15, 2008;
- containment system during the week of May 15, 2008; and
- emergency service water (ESW) system following repair of the high pressure core spray (HPCS) ESW keep-fill system during the week of June 23, 2008.

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, UFSAR, Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports (CRs), and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These activities constituted three partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

During the month of April 2008 the inspectors performed a complete system alignment inspection of the Division 1 standby diesel generator system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The

inspectors walked down the system to review mechanical and electrical equipment lineups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the attachment.

These activities constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (Annual/Quarterly) (71111.05AQ)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- Fire Zone 1CC-3; Control Complex, elevation 620' 6"';
- Fire Zone 1CC-4; Control Complex, elevation 638' 6";
- Fire Zone 1CC-5; Control Complex, elevation 654' 6";
- Fire Zone 0IB-4; Intermediate Building, elevation 654' 6" and 665';
- Fire Zone 1AB-1F; Unit 1 HPCS System; elevation 574' 10"; and
- Fire Zone 1AB-2; Auxiliary Building Unit 1, elevation 599".

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed, that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

These activities constituted six quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the UFSAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the alternate decay heat removal system between April 1 and April 5, 2008, to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments.

This inspection constitutes one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings of significance were identified.

1R07 Annual Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed the licensee's testing of residual heat removal (RHR) 'B' heat exchangers to verify that potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions.

This inspection constitutes one sample as defined in IP 71111.07-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q)

a. Inspection Scope

On May 19, 2008, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes one quarterly licensed operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant systems:

- ECCW; and
- RHR system

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes two quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

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 and management of plant risk, for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- reactor core isolation cooling (RCIC) controller emergent maintenance and design change activities during April 2008;
- ESW 'B' emergent maintenance activities during May 2008;
- ESW 'C' emergent maintenance activities during the week of May 26, 2008; and
- RCIC and RHR remote shutdown panel testing during the week of June 9, 2008.

These activities were selected based on their potential risk significance relative to the reactor safety cornerstone. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.56(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

These activities constituted four samples as defined in IP 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- RCIC operability with degraded flow controller during the month of April 2008;
- emergency diesel generator (EDG) operability following loading instability during the week of April 14, 2008;
- Division 3 EDG fuel oil transfer pumps during the week of April 28, 2008; and
- ESW 'B' discharge pipe coupling leakage during the week of May 5, 2008.

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. 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, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the attachment.

This inspection constitutes four samples as defined in IP 71111.15.-05.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed temporary modification involving the ESW 'B' and fire protection system pipe excavation and support modifications during the week of May 5, 2008.

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information against the design basis, the UFSAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system(s). The inspectors also compared the

licensee's information to operating experience information to ensure that lessons learned from other utilities had been incorporated into the licensee's decision to implement the temporary modification. The inspectors, as applicable, performed field verifications to ensure that the modifications were installed as directed; the modifications operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall plant performance.

This inspection constitutes one temporary modification sample as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

.2 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed the engineering design package for the RCIC new flow controller design implementation during the week of April 28, 2008, and discussed selected aspects with engineering personnel.

This document and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors observed ongoing and completed work activities to verify that installation was consistent with the design control documents. The modification was associated with the replacement of existing obsolete RCIC flow controllers that were experiencing failures attributed to age. A new design of controller, that was similar to the original, was installed in the control room and in the remote shutdown panel.

This inspection constitutes one permanent plant modification sample as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the following post-maintenance activities for review to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- Division 1 EDG during the weeks of April 14 and 28, 2008;
- 'EH13' alternate preferred electrical breaker following relay maintenance during the week of April 28, 2008;
- containment upper airlock ball valve maintenance during the month of June 2008;
- ESW 'C' during the weeks of May 26 and June 2, 2008; and
- remote shutdown control tests for RCIC and RHR systems during the week of June 23, 2008.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for 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 in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion), and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment.

This inspection constitutes five samples as defined in IP 71111.19-05.

b. Findings

The inspectors identified an Unresolved Item (URI) 05000440/2008003-01 associated with containment airlock maintenance. Maintenance was conducted on an upper containment airlock door seal system to replace a ball valve on March 26, 2008. The airlock seal failed on June 1, 2008, and the ball valve was found in a degraded condition with significant metal wear on the ball and stem interface. The licensee continued to review the issue at the end of the inspection period. Because the ball valve was found significantly degraded and had failed in less than three months after installation, the inspectors remained concerned whether appropriate procedures were implemented associated with the ball valve maintenance on March 26. The inspectors plan to re-evaluate this URI following completion of the licensee's investigation.

1R20 Outage Activities (71111.20)

.2 Other Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for a planned outage that began on April 4, 2008, and continued through April 12, 2008. The outage was conducted to repair a hotwell pump discharge valve and to perform maintenance on other plant

systems. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed or reviewed the reactor shutdown and cooldown, outage equipment configuration and risk management, electrical lineups, selected clearances, control and monitoring of decay heat removal, control of containment activities, startup and heatup activities, and identification and resolution of problems associated with the outage.

This inspection constituted one other outage sample as defined in IP 71111.20-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- oscillating power range monitor Channel D functional routine surveillance during the week of April 28, 2008 (routine);
- RCIC in-service testing during the week of June 2, 2008 (IST);
- HPCS pump and valve in-service testing during the week of June 2, 2008 (IST);
- Division 1 EDG routine testing during the week of June 9, 2008 (routine);
- RCIC and RHR remote shutdown panel routine testing during the week of June 9, 2008 (routine); and
- RHR 'B' pump and valve in-service testing during the week of June 16, 2008, (IST).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as-left setpoints were within required ranges; and the calibration frequency were in accordance with TSs, the USAR, procedures, and applicable commitments; measuring and test equipment calibration was current; test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied; test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used; test data and results were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers Code, and reference values were consistent with the system design basis;

where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the CAP. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes three inservice inspection samples, and three routine surveillance testing samples as defined in IP 71111.22, Sections -02 and -05.

b. Findings:

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on May 20, 2008, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This inspection constitutes one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

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

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the most current Annual Environmental Monitoring Report and licensee assessment results to verify that the Radiological Environmental Monitoring Program (REMP) was implemented as required by TS and the Offsite Dose Calculation Manual (ODCM). The inspectors reviewed the report for changes to the ODCM with respect to environmental monitoring commitments, in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and analysis of data. The inspectors reviewed the ODCM to identify environmental monitoring stations and reviewed licensee self-assessments, audits, licensee event reports, and interlaboratory comparison program results. The inspectors reviewed the Final Safety Analysis Report (FSAR) for information regarding the environmental monitoring program and meteorological monitoring instrumentation. The inspectors reviewed the scope of the licensee's audit program to verify that it met the requirements of 10 CFR 20.1101(c).

This inspection constitutes one sample as defined in IP 71122.03-5.

b. Findings

No findings of significance were identified.

.2 Onsite Inspection

a. Inspection Scope

The inspectors walked-down greater than 30 percent of the air sampling stations and greater than 10 percent of the thermoluminescence dosimeter (TLD) monitoring stations to determine whether they are located as described in the ODCM and to determine the equipment material condition.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors observed the collection and preparation of a variety of environmental samples (e.g., ground and surface water, milk, vegetation, sediment, and soil) and verified that environmental sampling was representative of the release pathways (as specified in the ODCM) and that sampling techniques were in accordance with procedures.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors verified that the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the FSAR, NRC Safety Guide 23, and licensee procedures. The inspectors verified that the meteorological data

readout and recording instruments in the control room and at the tower were operable. The inspectors compared readout data (i.e., wind speed, wind direction, and delta temperature) in the control room and at the meteorological tower to identify if there were any line loss differences.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors reviewed each event documented in the Annual Environmental Monitoring Report which involved a missed sample, inoperable sampler, lost TLD, or anomalous measurement for the cause and corrective actions. The inspectors also conducted a review of the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection (LLDs) and established background levels). The inspectors reviewed the associated radioactive effluent release data that was the likely source of the released material.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors reviewed significant changes made by the licensee to the ODCM as the result of changes to the land census or sampler station modifications since the last inspection. The inspectors reviewed technical justifications for changed sampling locations. The inspectors verified that 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 inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors reviewed the calibration and maintenance records for seven air samplers and composite water samplers. The inspectors reviewed calibration records for the environmental sample radiation measurement instrumentation (i.e., count room). The inspectors verified that the appropriate detection sensitivities with respect to TS/ODCM were utilized for counting samples (i.e., the samples met the TS/ODCM required LLDs). The inspectors reviewed quality control charts for maintaining radiation measurement instrument status and actions taken for degrading detector performance.

The inspectors reviewed the results of the REMP sample vendor's quality control program including the interlaboratory comparison program to verify the adequacy of the vendor's program and the corrective actions for any identified deficiencies. The inspectors reviewed audits and technical evaluations that the licensee performed on the vendor's program. The inspectors reviewed quality assurance audit results of the program to determine whether the licensee met the TS/ODCM requirements.

This inspection constitutes one sample as defined in IP 71122.03-5.

b. Findings

No findings of significance were identified.

.3 Unrestricted Release of Material from the Radiologically Controlled Area

a. Inspection Scope

The inspectors observed several locations where the licensee monitored potentially contaminated material leaving the radiologically controlled area (RCA) and inspected the methods used for control, survey, and release from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use to verify that the work was performed in accordance with plant procedures.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors verified that the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources. The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material and verified that there was guidance on how to respond to an alarm which indicates the presence of licensed radioactive material. The inspectors reviewed the licensee's equipment to ensure the 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 verified that the licensee performed radiation surveys to detect radionuclides that decay via electron capture. The inspectors reviewed the licensee's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters (i.e., counting times and background radiation levels). The inspectors verified that the licensee had not 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 inspection constitutes one sample as defined in IP 71122.03-5.

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, Licensee Event Reports (LERs), and Special Reports related to the radiological environmental monitoring program since the last inspection to determine if identified problems were entered into the CAP for resolution. The inspectors also verified that the licensee's self-assessment program was capable of identifying repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

The inspectors also reviewed corrective action reports from the REMP since the previous inspection, interviewed staff and reviewed documents 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 non-cited violations (NCVs) tracked in the corrective action system; and
- implementation/consideration of risk-significant operational experience feedback.

This inspection constitutes one sample as defined in IP 71122.03-5.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Public Radiation Safety

a. Inspection Scope

The inspectors sampled licensee submittals for the Public Radiation Safety PI for the period from the fourth quarter 2007 through the first quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's effluent samples, TS requirements, issue reports, event reports and NRC Integrated Inspection Reports for the period of October 2007 through May 2008, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one public radiation safety sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

.1 Routine Review of Items Entered Into the CAP

a. Inspection Scope

As part of the various baseline IPs discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrence reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the attached List of Documents Reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

Failure to Identify a Condition Adverse to Quality Related to the Reactor Recirculation System

Introduction: A finding of very low safety significance (GREEN) was identified by the inspectors for the licensee's failure to adhere to CAP procedures following the identification of a degraded condition affecting the 'A' recirculation system flow control valve (FCV).

Description: On May 14, 2008, during review of previous plant events related to the reactor recirculation system, the inspectors determined that a degraded condition of the linear velocity transducer (LVT) connector for FCV 'A' was found by licensee personnel during a refueling outage in May 2007. Following the refueling outage, beginning on May 24, 2007, the 'A' FCV experienced unexpected oscillations, which continued to worsen until June 5, 2007, when the 'A' FCV was manually locked by operators to prevent the condition from potentially causing reactor power transients greater than 11 percent per second. The plant conducted a forced outage to correct the problem with the 'A' FCV. During the forced outage, the licensee identified that an LVT wire was not soldered to its connector pin. This issue was entered into the CAP as CR 07-22503 dated June 24, 2007.

The inspectors reviewed Maintenance Rule Failure Review Sheet, CA 07-21072-001, in which the licensee characterized the LVT failure as a Maintenance Preventable Functional Failure. The review sheet stated, "This is due to the condition of the connector to the LVT being degraded and an opportunity existed previous to the component failure to replace the degraded connector. During the cold solder inspection it was identified that the LVT connector was damaged. Due to the inability to obtain parts to replace the damaged connector, tape was utilized in an attempt to make the connector rigid."

The inspectors requested to review the CR that documented the identification of the degraded connector during the licensee's refueling outage cold solder inspection. As stated in CR 07-21560, "Reactor Recirc FCV 'A' Oscillations," dated June 5, 2007, the cold solder inspections identified, "that too much un-insulated wire was exposed," and black electrical tape was used as a repair." However, the licensee determined that a CR had not been initiated to address the discovery of this degraded condition during the refueling outage cold solder inspections.

Normal Operating Procedure (NOP)-LP-2001, "Corrective Action Program," Revision 15, stated in step 4.3.2 that a CR shall be initiated upon discovery of any degraded conditions that affect USAR described systems, structures, or components. The reactor recirculation system was a USAR described system and the FCV had a TS-controlled function. Contrary to this licensee standard, during May 2007 the licensee failed to initiate a CR for the identification of a degraded condition affecting the FCV.

The licensee entered the issue of failure to adhere to corrective action program procedures into their corrective action program.

Analysis: The inspectors determined that the failure to adhere to CAP procedures associated with the degraded condition of the LVT was a performance deficiency warranting a significance evaluation in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued on September 20, 2007. The inspectors determined that the finding was more than minor because it was associated with the equipment performance attribute of the initiating events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, it affected the availability and reliability of equipment related to reactivity control.

The inspectors performed a significance determination of this issue using IMC 0609, "Significance Determination Process," dated January 10, 2008, and IMC 0609.04, "Initial Screening and Characterization of Findings," dated January 10, 2008. The issue screened as a transient initiator contributor. As such, the finding was of very low safety significance because under Question 1, all mitigation equipment or functions were available. The primary cause of this finding was related to the cross-cutting aspect in the area of Problem Identification and Resolution because the organization failed to properly identify issues related to nuclear safety P.1(a).

Enforcement: The inspectors determined that no violation of regulatory requirements had occurred because the reactor recirculation system FCV was not a safety-related component covered by 10 CFR Part 50, Appendix B. (FIN 05000440/2008003-02)

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily CR packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings of significance were identified.

.3 Major Equipment Reliability Program (MERP) and Recovery Plan In-depth Review

a. Inspection Scope

The inspectors reviewed two programs that the licensee put into place in early 2008 to improve plant equipment and human performance. The MERP was designed to repair or replace plant equipment that the licensee determined was unreliable or requiring significant resource expenditure to maintain. The Perry Recovery Plan was designed to address identified areas for improvement in organizational performance.

Throughout the inspection period, the inspectors reviewed the ongoing development of these two plans and the licensee's progress on the plans. The inspectors reviewed the plans to determine whether the licensee plans included complete and accurate identification of the problem; that evaluation and disposition of performance issues were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and were sufficient to address recurrence of the issues.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

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

.1 (Closed) LER 05000440/2007-007-00: Reactor Recirculation Pump Failure Results in Manual Reactor Protection System Actuation

On June 22, 2007, during a planned reactor shutdown, the licensee inserted a manual scram at a higher power level than originally planned. Flow was lost in the 'B' reactor

recirculation loop when the 'B' recirculation pump fast speed breaker failed to function as expected as operators attempted to shift the pump from fast to slow speed. The pump fast speed breaker rapidly cycled causing several starts of the pump in fast speed. Operators manually prevented the pump from starting by depressing the control panel stop button and then removed the pump control power to secure the pump. The cause of the reactor recirculation 'B' pump failure to transfer to slow speed was a failure of the interlock circuit Agastat time-delay relay. An auxiliary contact failed to open due to inadequate installation and testing of the relay when it was installed during the April 2007 refueling outage.

The pre-approved reactivity plan and standard shutdown sequence included reducing reactor power to 20 percent; removing the main turbine from the electrical grid, and shutting down the plant by inserting a manual scram. Single loop reactor operations were not included in the pre-approved sequence. Due to the failure of the reactor recirculation 'B' pump, the plant stabilized at approximately 23 percent reactor power with the main turbine connected to the electrical grid. The operators decided to insert a manual scram from this condition due to the inability to continue with the pre-planned sequence.

The licensee's corrective actions included replacing the failed Agastat relay and revising the procedures to include detailed installation and testing instructions. No additional findings were identified in the inspectors' review. This LER is closed.

This inspection constitutes one sample as defined in Inspection Procedure 71153-05.

.2 (Closed) LER 05000440/2007-008-00: Single Recirculation Loop Operation Results in Planned Reactor Shutdown

On June 29, 2007, the plant was operating in single loop at 58 percent reactor power and the licensee inserted a manual scram. The cause of the single loop configuration was that the reactor recirculation 'A' pump motor had failed due to an electrical fault in the motor. The license identified that the motor was operated past its recommended replacement date.

The licensee's standard shutdown sequence included reducing reactor power to 20 percent, removing the main turbine from the electrical grid, and shutting down the plant by inserting a manual scram. Single loop reactor operations were not included in the standard shutdown sequence and no reactivity plan was developed for the June 29, 2007, shutdown. Due to concerns with operating the plant near power-to-flow instability regions, the operators decided to insert a manual scram at 58 percent power.

The licensee's corrective actions included replacing the failed motor and instituting preventative maintenance tasks to meet large motor refurbishment recommendations. No additional findings were identified in the inspectors' review. This LER is closed.

This inspection constitutes one sample as defined in Inspection Procedure 71153-05.

.3 (Closed) LER 05000440/2008-002-00: Inoperable Emergency Closed Cooling System Results in Condition Prohibited by TSs

On February 10, 2008, the licensee identified, during restoration review of a clearance tag, that a heat exchanger bypass valve was closed during a maintenance window when it was required to be open. Work commenced on the control complex chilled water (CCCW) chiller on February 8, 2008, for scheduled maintenance. Emergency closed cooling 'B' water flow to the CCCW chiller was isolated and this reduced total emergency closed cooling 'B' system flow. Maintaining the minimum required emergency closed cooling 'B' system flow required opening of emergency closed cooling bypass valves. The bypass valve was closed due to an inadequate System Operating Instruction (SOI) that did not contain instructions to establish minimum emergency closed cooling flow when the CCCW chiller is isolated.

The inadequate SOI was caused by the improper classification of procedure changes associated with design modifications. Engineering changes were implemented in 2003 on the emergency closed cooling system which included physical separation of the emergency closed cooling 'A' and emergency closed cooling 'B' systems from nuclear closed cooling. These changes included redesignating the required positioning of several emergency closed cooling valves. The repositioning of valves impacted system operations and required thorough evaluation. Instead, the engineering changes were classified as, "simple change," and the procedures received a reduced review. The appropriate classification should have been, "significant change," where the changes would be reviewed by operations with cross-discipline review by the system engineer.

The licensee's corrective action included an extent-of-condition review, changes to the appropriate SOIs, warning placards placed on emergency closed cooling valves that could effect minimum flow requirements, and inclusion in the licensee's work program to classify plant valves that could impact any system's minimum flow requirement. This issue was found to be a licensee-identified violation and is documented in section 4OA7. The licensee documented the issue in CR 08-35163. This LER is closed.

This inspection constitutes one sample as defined in Inspection Procedure 71153-05.

.4 Sink Hole in Vehicle Access Between Owner-Controlled Area and the Protected Area

a. Inspection Scope

During the week of June 2, 2008, a sinkhole developed in a primary vehicle access road to the plant. The inspectors observed the licensee's response to the event to determine whether appropriate licensee procedures were followed, impacts to emergency response were assessed, and whether compensatory measures were adequate. The inspectors also reviewed the licensee's communications to determine whether appropriate notifications were made, including notification of affected local responders.

This inspection constitutes one sample as defined in Inspection Procedure 71153-05.

b. Findings

No findings of significance were identified.

.5 Downpower and High Radiation Alarms on the Main Steam Lines

a. Inspection Scope

On June 28, 2008, the licensee was conducting a planned downpower to 60 percent for routine maintenance. When power reached about 65 percent, at about 2:48 a.m., all four main steam line radiation monitors went into alarm. Operators entered plant emergency and off-normal procedures for a potential leak outside containment and gross fuel failure. The resident inspectors were monitoring the licensee's power reduction and observed the licensee's response to the event from the control room.

During the response to the high radiation alarms, licensee personnel identified that the hydrogen water chemistry (HWC) system was in manual control when it should have been in automatic to adjust hydrogen injection rate with power. The HWC system was returned to automatic mode and radiation levels returned to normal at about 4:20 a.m. It was promptly determined that the HWC control setting resulted in the elevated radiation levels. The planned reduction in reactor power was accompanied by a reduction in feedwater flow. The hydrogen injection rate had remained constant because it was in a manual control mode. With a constant hydrogen injection rate and reduced reactor flow, the concentration of hydrogen in the reactor increased. As hydrogen concentration increased, ammonia generation increased in the reactor and this caused a higher level of carryover of N-16, which caused higher radiation levels in the steam pipes. The licensee determined that there were no adverse consequences to the plant or personnel due to the event. The licensee entered the issue into their CAP.

The inspectors observed licensee response to determine whether the licensee implemented appropriate procedures, whether compliance with TS was maintained, and whether appropriate notifications were made associated with the event.

This inspection constitutes one sample as defined in Inspection Procedure 71153-05.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.6 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted the following observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

- security post observations;
- security force shift turnover activities; and
- degraded equipment.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.7 Safety Culture and Safety Conscious Work Environment

a. Inspection Scope

As part of the continuing activities to monitor the licensee's performance improvement activities, the inspectors observed meetings held by the licensee's independent safety culture/safety conscious work environment (SC/SCWE) assessment team. The inspectors' objectives were twofold; 1) to observe the activities of the independent team and their assessment of information gathered through individual interviews with licensee staff and 2) to monitor the site staff's perceptions of the licensee's efforts to improve site overall performance with a focus on human performance.

b. Observations and Findings

The inspectors concluded that the independent SC/SCWE assessment team appropriately evaluated information gained through individual interviews with selected site staff. The team discussions appropriately considered whether any safety issues were identified, whether the information was consistent with information gathered through the survey tool, whether the information supported the results from other interviews, and whether any new information required follow-up through the interview process.

The inspectors noted that the team did not identify any safety issues, and this was consistent with the inspectors' assessment of the material discussed during the meeting. The inspectors also noted that the overall tone of the interviews appeared to indicate that the licensee's staff was optimistic with regards to the licensee's plans for improving performance at the Perry site.

No findings of significance were identified.

.8 (Closed) URI 05000440/2008002-12: Reactor Core Isolation Cooling System Flow Controller Reliability.

At the end of the inspection period ending March 31, 2008, the inspectors continued to evaluate the reliability of the RCIC flow controller. The licensee had identified that the controller was in need of replacement due to reliability concerns and intended to replace the controller with a new design when parts became available. The inspectors remained concerned whether appropriate measures were in place to compensate for the currently in-service flow controller in light of the controller failure history. The licensee instituted a controller output voltage monitoring program, and in April replaced one of the controllers with a spare when output voltage on the installed controller was observed to drift. The controller replacement was made before voltage affected operability. Soon after the replacement with a spare, the licensee installed a new design of flow controller. At the

end of the inspection period, this new controller had been functioning without issue since installation. This URI is closed.

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to the Plant General Manager, Mr. K. Krueger on July 14, 2008. The licensee did not identify any materials reviewed during this inspection and proposed for inclusion in this report as proprietary in nature.

.2 Interim Exit Meetings

The inspectors presented the preliminary inspection results of the licensee's radiological environmental monitoring and radioactive material control program, and verification of the PI for public radiation safety with the Plant General Manager, Mr. K. Krueger, on May 23, 2008.

The licensee did not identify any materials reviewed during this inspection and proposed for inclusion in this report as proprietary in nature.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements, which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as NCVs.

Cornerstone: Mitigating Systems

- Technical Specification 3.7.10, “Emergency Closed Cooling Water (ECCW) System,” Condition A.1, required, when one or two ECCW subsystem(s) are inoperable, that the licensee immediately declare associated system(s) or component(s) inoperable. Condition B.1, of TS 3.7.10, required that, if the Required Action and associated Completion Time of Condition A was not met, the licensee put the plant in Mode 3 within 12 hours. Contrary to this requirement, on February 8, 2008, the plant remained in Mode 1 at 4:30 p.m. when TS Limiting Condition for Operation (LCO) 3.7.10 requirements were not met. Specifically, on February 10, 2008, the licensee discovered that minimum flow requirements for operability were not met for the ECC 'B' subsystem since February 8, 2008, at 4:40 a.m., which required that ECC 'B' to be declared inoperable. Not knowing that TS LCO 3.7.10 was not met, licensee personnel did not make the required mode changes. Upon discovery, the licensee took immediate actions to restore ECC 'B' operability. The finding was determined to be of very low safety significance because it was determined to not have resulted in an actual loss of system safety function of a single train for greater than its TS-allowed outage time. The issue was entered into the CAP as CR 08-35163.

- As stated in 10 CFR 50.36(d)(3), “Surveillance Requirements,” are requirements relating to testing that assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be

met. Contrary to this requirement, on June 9, 2008, the licensee discovered that surveillance procedures did not verify the required position of some valves necessary for operability of the RHR 'A' system during monthly surveillance verification. In reviewing SVI-E12-T1182A, "RHR 'A' LPCI Valve Lineup Verification and System Venting," Revision 8, licensee personnel determined that the valve positions for three valves were not checked during the surveillance. Specifically the RHR 'A' head spray isolation valve (LPCI injection), an unlocked valve, was not verified for a two-year period. The licensee immediately verified proper position of the three valves and revised the surveillance procedure. The issue was determined to be of very low safety significance because it was determined not to have resulted in an actual loss of system safety function. The licensee entered the issue into their CAP as CR 08-41467.

Cornerstone: Occupational Radiation Safety

- Perry Station TS 5.7.1 states in part, that each HRA shall be barricaded and conspicuously posted as an HRA and entrance thereto shall be controlled by issuance of an RWP. Contrary to the above, on or about May 1, 2007, several security officers entered the HRA in the turbine building lube oil room. A violation of regulatory requirements occurred when the area was not effectively barricaded and controlled. Additionally, the area was at times left unattended and uncontrolled by the licensee's radiation protection staff. This was identified in the licensee's CAP as CR 07-23259. The finding was determined to be of very low safety significance because it was not an ALARA (as low as reasonably achievable) planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised.

- Perry Station TS 5.7.1 states in part, that each HRA shall be barricaded and conspicuously posted as an HRA and entrance thereto shall be controlled by issuance of an RWP. The TS further requires that entry into such areas be made after dose rate levels in the area have been established and personnel are aware of them.

  Contrary to the above, on May 1, 2007, on two occasions while performing a fire watch, a security officer entered a controlled, posted, and barricaded HRA in the turbine building lube oil room without being on a RWP which permitted access into the area. Additionally, the officer had not received a briefing from the radiation protection staff such that the officer was aware of the radiological conditions prior to entering the area.

  Specifically, when the officer opened the north door to the area, the officer observed a posted HRA boundary. The officer immediately shut the door and proceeded to the south door of the area and observed a similar posted HRA boundary. Although the officer was not on an RWP which allowed access into the area, the officer decided to finish the fire watch and proceeded across the boundary. The officer also entered the same area during a second fire watch tour later that day. Based on an OI investigation (OI Case No. 3-2007-021), the NRC staff concluded that the officer's second entry into the HRA was a willful violation.

  However, because the violation had no actual radiological significance and minimal potential significance, the violation involved the acts of a low-level individual resulting from an isolated action without management involvement, there was no economic or other advantage gained as a result of the violation, and adequate remedial action was taken, the violation was categorized at Severity Level IV. Because the violation is of

very low safety significance, it meets the additional criteria in Section VI.A.1 of the NRC Enforcement Policy, and it has been entered into the corrective action system (CR 19784), it is being treated, after consultation with the Director, Office of Enforcement, as an NCV.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Bezilla, Vice President Nuclear
K. Krueger, Plant General Manager
M. Alfonso, Manager, Chemistry
A. Cayia, Director, Performance Improvement
K. Cimorelli, Director, Maintenance
D. Evans, Manager, Operations
J. Grabner, Director, Site Engineering
H. Hanson, Jr., Director, Work and Outage Management
S. Thomas, Manger, Radiation Protection

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000440/2008003-02	FIN	Failure to Identify a Degraded Flow Control Valve Connector (Section 71151)

Opened

05000440/2008003-01	URI	Adequacy of Airlock Ball Valve Maintenance (Section 1R19)

Closed

05000440/2007-007-00	LER	Reactor Recirculation Pump Failure Results in Manual Reactor Protection System Actuation (Section 71153)
05000440/2007-008-00	LER	Single Recirculation Loop Operation Results in Planned Reactor Shutdown (Section 71153)
05000440/2008-002-00	LER	Inoperable Emergency Closed Cooling System Results in Condition Prohibited by TSs (Section 71153)
05000440/2008002-12	URI	Reactor Core Isolation Cooling System Flow Controller Reliability (Section 4OA5)

Discussed

None

Updated

None

LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector 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.

1R01 Adverse Weather

ONI-R10; Loss of AC Power; Revision 8
ONI-S11; Hi/Low Voltage; Revision 5
NOP-OP-1003; Grid Reliability Protocol; Revision 0
NOP-OP-1007; Risk Determination; Attachment 2; Revision 5
PAP-0102; Interface with the Transmission Operator; Revision 4
NOP-WM-2001; Work Management Scheduling / Assessment / Seasonal Readiness Processes; Revision 6
CR 07-12911; TBCC Hx 'B' Tubes not Flush with Tube Sheet; dated January 15, 2007
CR 07-12756; ECP 06-0012 Required Revision to Correct Placement of New Anodes; dated January 15, 2007
CR 07-13936; Control Complex Chiller C Trip; dated February 2, 2007
CR 07-12667; CCCW Chiller B Oil Reservoir Level at Minimum; dated January 14, 2007

1R04 Equipment Alignment

SOI R-43; Division 1 and 2 Diesel Generator System; Revision 32
SDM R-10; Plant Electrical System; Revision 9
VLI R-47; Division 1 and 2 Diesel Generator Lubricating Oil System (Unit 1); Revision 6
VLI R-44; Division 1 and 2 Diesel Generator Starting Air System (Unit 1); Revision 4
VLI R-45; Division 1 and 2 Diesel Generator Fuel Oil System (Unit 1); Revision 5
VLI R-46; Division 1 and 2 Diesel Generator Jacket Water System (Unit 1); Revision 4
CR 07-24775; Division 1 Diesel Generator Overspeed Trip
CR 07-22003; Potential Broader Scope Issue with Relay Failures-No Preventative Maintenance
CR 08-37130; Division 1 Diesel Generator Control Transfer Switch SW8 Hardware Found Loose
Perry Nuclear Plant Health Report 2007-04
CR 08-40499; NRC Identified Valve Locking Device Installed Incorrectly; dated May 16, 2008
USAR Section 9.2.1; Revision 12
SDM P-45; Emergency Service Water System; Revision 9
SOI-P-45/P-49; Emergency Service Water and Screen Wash Systems; Revision 13
VLI P-45; Emergency Service Water System; Revision 7
Drawing 302-0791-00000; Emergency Service Water System; Revision SS
Drawing 302-0792-00000; Emergency Service Water System; Revision LL
CR 08-40969; High Pressure Core Spray Inoperable; dated May 28, 2008
CR 08-411589; ESW to ECC Heat Exchanger A D/P Reading Low; dated June 11, 2008
CR 08-42164; NRC Questions on Protected Train Postings and Risk Assessment; dated June 21, 2008

1R05 Fire Protection (Annual/Quarterly)

FPI-0IB; Intermediate Building; Revision 5
FPI-1AB; Auxiliary Building; Revision 2
FPI-0CC; Control Complex; Revision 7
FPI-A-A02, "Periodic Fire Inspections," Revision 5

PAP-1910, "Fire Protection Program," Revision 15
PAP-0204, "Housekeeping/Cleanliness Control Program," Revision 20

1R06 Flood Protection Measures
Calculation JL-125; ECCS Pump Room Water Depth Due to Gross Failure of Suction Penetration; dated November 16, 2007
Calculation JL-061; Auxiliary Building Flooding Analysis; dated December 21, 2007

1R07 Heat Sink Performance
WO 200150845; RHR Heat Exchanger B Performance Testing; dated June 9, 2008

1R11 Licensed Operator Requalification Program
OTLC-3058200808_PY-SGB; Simulator Scenario; dated April 25, 2008

1R12 Maintenance Effectiveness
CR 07-13759; FAC Point Wall Thicknesses are Below Acceptance Criteria; January 31, 2007
CR 07-15064; Piping Measurements Below Tmin Allowable of 87 ½% on Emergency Closed Cooling; dated February 23, 2007
CR 07-12665; Abnormal Noise Noted on Start of 1P42C0001B; dated January 14, 2007
CR 07-13119; Remote Shutdown ECC Indicator Reads High; dated January 22, 2007
CR 07-15121; SVI-P42-T2002 Valve Limit Switch Failed to Properly Indicate Closed; dated February 26, 2007
Maintenance Rule Assessment for ECC system 1st Quarter 2008
USAR Section 5.4.7; Revision 12
SDM E-12; Residual Heat Removal System; Revision 9
SOI-E-12; Residual Heat Removal System; Revision 39
Drawing 302-0641-00000; Residual Heat Removal System; Revision AAA
Drawing 302-0642-00000; Residual Heat Removal System; Revision EE
Drawing 302-0643-00000; Residual Heat Removal System; Revision XX
Perry Nuclear Power Plant – Plant Health Report 2008-01
Maintenance Rule Assessment for RHR System – 1st Quarter 2008
CR 08-41017; Heat Exchanger Testing for GL 89-13, RHR B; dated May 29, 2008
CR 08-41467; Error in RHR A Valve Lineup Verification Checklist in SVI-E12-T1182A; dated June 9, 2008
CR 08-42285; Maintenance Rule Expert Panel Meeting Cancelled Due to a Lack of Quorum; dated June 24, 2008

1R13 Maintenance Risk Assessments and Emergent Work Control
Perry Work Implementation Schedule; Week 10, Period 4
Perry Work Implementation Schedule; Week 11, Period 4
CR 08-38340; Load Anomaly Observed During Div 1 DG Unloading; dated April 15, 2008
PSA Configuration Calculation for May 29, 2008
Event Notification dated May 28, 2008
CR 08-40969; High Pressure Core Spray Inoperable; dated May 28, 2008
PSA Evaluation for Period 5, Week 6; Revision 1

1R15 Operability Evaluations
Problem Solving Plan; RCIC Flow Controller Output; dated April 18, 2008
CR 08-38443; RCIC Controller Output Computer Point, Decreasing Trend; dated April 16, 2008
CR 08-38340; Load Anomaly Observed During Div 1 DG Unloading; dated April 15, 2008
ODMI Recommendation Summary for ESW B coupling; dated May 19, 2008

1R18 Plant Modifications

Engineering Change Package 08-0131-001; Control Room RCIC NUS Controller; dated April 21, 2008
Engineering Change Package 08-0131-002; Remote Shutdown Panel RCIC NUS Controller; dated April 21, 2008
CR 08-39814; ESW Coupling Leak – Division 2; dated May 5, 2008

1R19 Post-Maintenance Testing

SVI-R43T1317; Division 1 EDG PMT; dated April 18, 2008
WO 200318887; Division 1 EDG Troubleshooting; dated April 18, 2008
WO 200218488; EH13 Alternate Preferred Relay GR-5 50G; dated April 28, 2008
WO 200272874; ESW C PMT; dated May 31, 2008
WO 20032461; HPCS ESW Pump Discharge Check Valve; dated June 2, 2008
WO 200324353; HPCS ESW Pump Discharge Valve; dated June 2, 2008
CR 08-41071; Valve Exceeded MOV Test Criteria during Initial Test; dated May 30, 2008
CR 08-40986; Potential Water Hammer Event in HPCS ESW system; dated May 29, 2008
CR 08-41097; Upper Air Lock Outer Door Unplanned Tech Spec Entry; dated June 1, 2008
CR 08-41746; Repeat Failure Of Door Pin Locking Collar On Air Lock Doors; dated June 12, 2008
CR 08-42009; Air Lock Door Linkage Binding; dated June 19, 2008
SVI-C61-T1200; Remote Shutdown Control Test – RCIC and RHR; Revision 3
SVI-C61-T1200; Remote Shutdown Control Test – RCIC and RHR; Revision 4
WO 200194363; Perform SVI-C61-T1200 (24M) Remote Shutdown Control Test – RCIC and RHR; dated June 12, 2008
WO 200326089; Correct Deficiencies Noted During Performance of SVI-C61-T1200, Verify Field Wiring on Switch 1C61A-S3; dated June 24, 2008
CR 08-41755; Valve Position Indication Circuit Failure Identified During SVI-C61-T1200; dated June 13, 2008
CR 08-41779; Failed Valve Position Indication Circuit Identified by SVI-C61-T1200; dated June 13, 2008
CR 08-41808; Parallel Path Preventing Proper Reading During SVI-C61-T1200; dated June 14, 2008

1R20 Refueling and Other Outage Activities

Perry Work Implementation Schedule, Week 8, Period 4
Perry Work Implementation Schedule, Week 9, Period 4
IOI-3; Power Changes; Revision 36
Planned Forced Outage Schedule; Hotwell Pump ‘A’ Discharge Valve Repair
CR 08-37688; Reactor Scram for 4/4/08 Planned Outage; dated April 4, 2008
CR 08-38100; Refuel Bridge Interlock Prevents Rod Withdraw Delays Plant Start-Up; dated April 11, 2008
CR 08-38113; Digital Feed Water Alarms Occurring During Preparation For Start Up; dated April 11, 2008
CR 08-38139; Multiple SRM C Short Period Alarms During Plant Start Up; dated April 11, 2008

1R22 Surveillance Testing

SVI-C51-T0051-D; OPRM Channel D Functional; Revision 5
WO 200272793; RCIC Pump And Valve Operability Test; dated June 2, 2008
WO 200268995; RCIC System Valve And Flow Controller Position Verification; dated, June 2, 2008

WO 200272838; HPCS Pump and Valve Operability Test; dated June 1, 2008
CR 08-41083; Failure of HPCS Test Valve to SP to Fully Stroke Open on the First Attempt; dated May 31, 2008
CR 08-41107; RCIC Cold Quick Start Conditions not Obtained; dated June 2, 2008
SVI-E51-T2001; RCIC Pump and Valve Operability Test; Revision 29
SVI-E51-T1272; RCIC System Low Pressure Operability Test; Revision 14
CR 08-41158; Does SVI-E51-T2001 Acceptance Criteria Meet RCIC Design Function; dated June 2, 2008
WO 200153999; RCIC Pump and Valve Operability Test; dated April 11, 2006
WO 200289598; Diesel Generator Start and Load Division 1; dated June 11, 2008
WO 200194363; Remote Shutdown Control Test – RCIC and RHR; dated June 15, 2008
WO 200273008; RHR B Pump and Valve Operability Test; dated June 16, 2008

1EP6 Drill Evaluation
PNPP ERO Training Drill Guide; dated May 20, 2008
Perry Plant Emergency Preparedness Team Practice Drill Scenario Guides; dated May 20, 2008

2PS3 Radiological Environmental Monitoring Program And Radioactive Material Control Program
CR 07-19784; Individuals Entered High Radiation Area on Wrong RWP; May 1, 2007
CR 07-23259; High Radiation Area Barricade May Not Have Met Expectations; July 10, 2007
CR 07-24771; Relevant Information Identified Subsequent to CR 07-19784 Approval; August 06, 2007
CR 07-24852; Environmental Air Sample Pump Found Not Operating Properly; August 8, 2007
CR 07-29979; Gross Alpha Activity Detected in WARF Air Sample; September 17, 2007
CR 08-33510; Radioactive Material Generating a Radiation Area Was Not Posted Appropriately; January 15, 2008

4OA1 Performance Indicator Verification
Gamma Spectroscopy LLD Confirmation Reports Various Dates
Groundwater Flow Characteristics Report Perry Nuclear Power Plant; October 20, 2006
Offsite Dose Calculation Manual; Revision 14
NUPIC Joint Audit Report 19238 of Environmental Inc.; January 18, 2006
2006 Perry Annual Environmental and Effluent Release Report; May 2007
2007 Perry Annual Environmental and Effluent Release Report; May 2008

4OA2 Identification and Resolution of Problems
Calculation Data Sheet; Composite Human Performance for 1st Quarter 2008
Major Equipment Reliability Program
Perry recovery Plan
CR 08-39668; Unexpected Plant Response During Recorder PMT; dated May 2, 2008

4OA3 Followup of Events and Notices of Enforcement Discretion
LER 2007-007, Reactor Recirculation Pump Failure Results in Manual Reactor Protection System Actuation; dated May 14, 2008
LER 2007-008; Single Recirculation Loop Operation Results in Planned Reactor Shutdown; dated May 14, 2008
LER 2008-002; Inoperable Emergency Closed Cooling System Results in Condition Prohibited by TSs; dated April 8, 2008

4OA5 Other Activities

CR 08-39768; Protected Area Barrier May Not Meet the Requirements of The Security Plan; dated May 4, 2008

4OA7 Licensee-Identified Violations

CR 08-41467; Error in the RHR A Valve Lineup Verification Checklist in SVI-E12-T1182A; dated June 9, 2008
LER 2008-002; Inoperable Emergency Closed Cooling System Results in Condition Prohibited by TSs; dated April 8, 2008
CR 08-35163; Unplanned Tech Spec Entry Which Declared ECC B and Associated Systems Inop; dated February 10, 2008
CHI-0005; Miscellaneous Sampling Systems; Revision 10
CHI-0053; Operation of the Gamma Spectroscopy System Attachment-3 GSS Efficiency Calibrations Various Dates
HPI-H0004; Identification of Radioactive Materials and Release of Materials from RRAs; Revision 14
Master List Master List of Sampling Locations and Media for the REMP; April 20, 2006
NOBP-LP-4012; NRC Performance Indicators; Revision 03
NOP-WM-7003; Radiation Work Permit (RWP); Revision 03
NOP-WM-7003; Radiation Work Permit (RWP); Revision 04
NOP-WM-7017; Contamination Control Program; Revision 01
NOP-WM-7021; Radiological Postings, labeling, and Markings; Revision 02
PAP-0114; Radiation Protection Program; Revision 14
PYBP-RPS-0037; Expectations for Radiological Postings; Revision 03
REC-0104; Chemistry Specifications; Revision 27
REMP-0009; Surface and Drinking Water Sampling; Revision 09
REMP-0010; Milk Sampling; Revision 06
REMP-0013; Sampling Locations; Revision 10
REMP-0014; Exchange of Field Dosimeters; Revision 05
REMP-0023; Air Sampling; Revision 07
REMP-0024; Air Sampling Maintenance and Calibrations; Revision Various Dates
RPI-1301;Movement of Radioactive Material / Waste Outside of RCAs and Onsite Interim Storage; Revision 06

LIST OF ACRONYMS USED

CAP	Corrective Action Program
CCCW	control complex chilled water
CFR	*Code of Federal Regulations*
CR	condition report
ECCW	emergency closed cooling water
EDG	emergency diesel generator
ESW	emergency service water
FCV	flow control valve
FENOC	FirstEnergy Nuclear Operating Company
FSAR	Final Safety Analysis Report
HPCS	high pressure core spray
HRA	High Radiation Area
HWC	hydrogen water chemistry
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LCO	limiting condition for operation
LER	Licensee Event Report
LLD	lower limit of detection
LVT	linear velocity inducer
NCV	non-cited violation
NOP	Normal Operating Procedure
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OI	Office of Investigations
RCA	radiologically controlled area
REMP	Radiological Environmental Monitoring Program
RCIC	reactor core isolation cooling
RHR	residual heat removal
RWP	radiation work permit
SC/SCWE	safety culture/safety conscious work environment
SDP	Significance Determination Process
SOI	Standard Operating Instruction
SVI	Surveillance Instruction
TBCC	Turbine Building Closed Cooling
TLD	thermoluminescence dosimeter
TS	Technical Specification
TSO	Transmission System Operator
UFSAR	Updated Final Safety Analysis Report
USAR	Updated Safety Analysis Report
WO	work order