



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, IL 60532-4352

October 29, 2010

Mr. Mark Bezilla  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Perry Nuclear Power Plant  
P. O. Box 97, 10 Center Road, A-PY-A290  
Perry, OH 44081-0097

**SUBJECT: PERRY NUCLEAR POWER PLANT NRC INTEGRATED  
INSPECTION REPORT 05000440/2010004**

Dear Mr. Bezilla:

On September 30, 2010, 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 October 6, 2010, with you and 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.

Based on the results of this inspection, two NRC-identified findings of very low safety significance (Green) were identified. Both of the findings were determined to involve a violation of NRC requirements, however, because the findings were of very low safety significance and because the issues were entered into your corrective action program, the NRC is treating the findings as non-cited violations (NCVs) consistent with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the subject or severity of these NCVs, 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 addition, if you disagree with the cross-cutting aspect of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Perry Nuclear Power Plant.

M. Bezilla

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Sincerely,

*/RA/*

Jamnes L. Cameron, Chief  
Branch 6  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000440/2010004  
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 050000440/2010004

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Perry Nuclear Power Plant, Unit 1

Location: Perry, Ohio

Dates: July 1, 2010, through September 30, 2010

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Enclosure

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## SUMMARY OF FINDINGS

IR 05000440/2010004; 07/01/2010 – 09/30/2010; Surveillance Testing; Problem Identification and Resolution.

The inspection was conducted by resident and regional inspectors. The inspection report (IR) covers a 3-month period of resident inspection. Two green findings which were NCVs were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter (IMC) 0609 "Significance Determination Process" (SDP). Cross-cutting aspects were determined using IMC 0310, "Components Within The Cross-Cutting Areas." 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 December 2006.

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

#### Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion XI, Test Control, for the unacceptable preconditioning of the 'A' residual heat removal (RHR) pump minimum flow valve prior to quarterly in-service testing. Specifically, the licensee performed a surveillance that cycled the valve prior to performing stroke time testing, and had not previously performed an evaluation assessing the sequence for preconditioning. The licensee entered the issue into their corrective action program.

The inspectors determined that unacceptably preconditioning the RHR minimum flow valve was a performance deficiency that affected the Mitigating Systems Cornerstone because it can mask the true as-found condition of a component designed to mitigate accidents. The performance deficiency was determined to be more than minor because, if left uncorrected, it could lead to a more significant safety concern. The finding was of very low safety significance because it was not a design/qualification deficiency, did not represent a loss of system safety function, did not result in a loss of function of a single train for greater than its Technical Specification (TS)-allowable outage time, did not result in a loss of function of nonsafety-related risk-significant equipment and was not risk significant due to external events. This finding has a cross-cutting aspect in the work control planning component of the Human Performance area (per IMC 0310 H.3(a)), because the licensee did not appropriately plan work activities for plant structures, systems, and components. Specifically, the licensee did not schedule the surveillance tests in the proper sequence to prevent unacceptable preconditioning of the valve. (Section 1R22)

- Green. The inspectors identified a finding of very low safety significance and associated NCV for a failure to comply with TS 3.0.2 by not entering TS Limiting Condition for Operation (LCO) 3.3.5.1 Condition A and TS LCO 3.3.6.1 Condition A when required. The inspectors determined that the licensee incorrectly utilized a TS Surveillance Requirement Note that allows a delay in entering the Conditions and Required Actions for the given TS LCO. As a result, the licensee failed to correctly enter the Conditions and Required Actions when reactor level instruments were declared inoperable to

perform testing in support of planned maintenance. The licensee entered the issue associated with the failure to comply with TS into their corrective action program.

This performance deficiency was determined to be more than minor because it impacted the Equipment Performance attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage); and if left uncorrected it could lead to a more significant safety concern. This finding is of very low safety significance because it was not a design/qualification deficiency, did not represent a loss of system safety function, did not result in a loss of function of a single train for greater than its TS-allowable outage time, did not result in a loss of function of nonsafety-related risk-significant equipment and was not risk significant due to external events. This finding has a cross-cutting aspect in the decision making component of Human Performance cross-cutting area (per IMC 0310 H.1(a)), because the licensee did not use conservative assumptions to ensure the proposed action was safe. Specifically, the licensee incorrectly used the TS Surveillance Requirement Note to satisfy maintenance requirements. (Section 4OA2)

**B. Licensee-Identified Violations**

One violation of very low safety significance was identified by the licensee and has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and its corrective action tracking number are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

The plant began the inspection period at 100 percent power. With the exception of minor reductions in power to support routine surveillances and rod pattern adjustments, and several occasions when the plant reduced power because of plant cooling limitations caused by summer environmental conditions, the plant remained at full power for the entire period.

### 1. REACTOR SAFETY

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

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

##### External Flooding

##### a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Updated Safety Analysis Report (USAR) for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site which would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors walked down underground bunkers/manholes subject to flooding that contained multiple train or multi-function risk-significant cables. The inspectors also reviewed the Off-Normal Instructions (ONIs) for mitigating the design basis flood to ensure it could be implemented as written.

This inspection constituted one sample of external flooding as defined in Inspection Procedure (IP) 71111.01-05.

##### b. Findings

No findings were identified.

#### 1R04 Equipment Alignment (71111.04Q)

##### a. Inspection Scope

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

- 'B' annulus exhaust gas treatment system (AEGTS) on July 7, 2010;
- 'A' motor control center, switchgear and miscellaneous electrical equipment heating ventilation and air conditioning system on September 2, 2010; and

- 'B' reactor protection system (RPS) power supply electrical alignment while 'A' RPS motor generator set was out of service on September 30, 2010.

The inspectors selected these systems based on their risk-significance relative to the Reactor Safety Cornerstone 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, USAR, 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 corrective action program (CAP) with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These inspections constituted three partial system walkdown samples for equipment alignment as defined in IP 71111.04-05.

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On September 24, 2010, the inspectors concluded a complete system alignment inspection of the emergency closed cooling (ECC) 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 line-ups, electrical power availability, system temperature indications, 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.

This inspection constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05Q)

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 0IB-4; Intermediate Building 654'-6" Elevation;
- Fire Zone 0IB-3; Intermediate Bldg 620' Elevation;
- Fire Zone 0CC-2; Control Complex 599' Elevation;
- Fire Zone 0IB-1; Intermediate Bldg 574' Elevation; and
- Fire Zone 1AB-3B; Auxiliary Building 620'-6" Elevation West.

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 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 five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings 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 USAR, engineering calculations, and ONI's 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 low pressure core spray areas 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 constituted one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On August 30, 2010, 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;
- crew's 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
- the 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 constituted one quarterly operator license requalification program sample as defined in IP 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

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

- 'B' compressible gas mixing compressor;
- 'A' control room ventilation system;
- Division 3 emergency diesel generator (EDG) and high pressure core spray (HPCS) system; and
- Upper and lower containment airlocks.

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 constituted four quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings 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:

- conservative grid operations on July 15, 2010;
- work on control rod drive pump 'B' concurrent with testing of the Division 3 EDG on August 17, 2010;
- EDG fuel oil samples on August 26, 2010;
- reactor feed booster pump discharge check valve repair during the week of September 13, 2010; and
- HPCS diesel generator repairs during the week of September 15, 2010.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(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 maintenance risk assessments and emergent work control activities constituted five samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- Technical Support Center ventilation with degraded flow turning vanes;
- EDG ventilation systems with installed relays beyond the 20-year qualification life;
- Emergency Closed Cooling cross-connect to fuel pool cooling and cleanup valve failed stroke time testing; and
- 'A' control room ventilation plenum missing insulation.

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 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 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 to this report.

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

b. Findings

No findings were identified.

1R18 Temporary Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed the temporary modification for the Hot Surge Tank Hi/Low Level Alarm. The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information against the design basis, the USAR, 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. Documents reviewed in the course of this inspection are listed in the Attachment to this report.

This inspection constituted one sample of a temporary modification as defined in IP 71111.18-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following post-maintenance (PM) activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- safety relief valve control switch replacement during the week of August 2, 2010;
- high drywell pressure master trip unit replacement during the week of August 9, 2010;
- AEGTS fan replacement during the week of August 25, 2010;
- emergency service water (ESW) ventilation system outlet damper hydramotor work during the week of September 7, 2010;
- HPCS pump breaker relay replacement during the week of September 17, 2010; and
- Division 3 EDG outage retest during the week of September 24, 2010.

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 USAR, 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 PM 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 to this report.

This inspection constituted six PM testing samples as defined in IP 71111.19-05.

b. Findings

No findings 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:

- Residual Heat Removal (RHR) 'A' pump and valve inservice testing during the week of July 12, 2010 (IST);
- Emergency Service Water (ESW) 'C' pump and valve operability test during the week of July 23, 2010 (routine);
- Reactor Core Isolation Cooling (RCIC) pump and valve operability test during the week of August 2, 2010 (routine); and
- ESW 'B' pump and valve operability testing during the week of August 13, 2010 (routine).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and 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 TS, 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 IST activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers (ASME) 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 constituted three routine surveillance testing samples and one inservice testing sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, Test Control, for unacceptable preconditioning of the 'A' RHR pump minimum flow valve prior to quarterly IST. Specifically, the surveillance test sequencing caused this valve to be opened and closed before the documented stroke time testing, and the sequence had not been evaluated for preconditioning prior to performance of the tests.

Description: On July 8, 2010, at approximately 9:30 a.m., the inspectors observed the performance of surveillance test SVI-E12-T2001, RHR A Pump and Valve Operability Test. Included in this test is the quarterly timed valve stroke of 1E12-F0064A, RHR Pump A Min Flow Valve, as required by the IST program. During review of the previous shift narrative logs, it was identified that surveillance test SVI-E12-T1194, LPCI (Low Pressure Core Injection) Pump A Discharge Low Flow (Bypass) Channel Functional for 1E12-N652A, was performed at around 1:30 a.m. This surveillance calibrates

instrument 1E12-N652A, LPCI Pump A Discharge Low Flow Instrument. The calibration of the low flow instrument results in the 'A' train RHR pump minimum flow valve stroking. This sequence of testing fully cycled the valve several times less than 8 hours prior to obtaining the IST stroke timing data during SVI-E12-T2001.

Inspection Manual Technical Guidance 9900 defines unacceptable preconditioning, in part, as “The alteration; variation; manipulation; or adjustment of the physical condition of a structure, system, and component (SSC) before or during TS surveillance or ASME Code testing that will alter one or more of an SSC’s operational parameters, which results in acceptable test results. Such changes could mask the actual as-found condition of the SSC and possibly result in an inability to verify the operability of the SSC. In addition, unacceptable preconditioning could make it difficult to determine whether the SSC would perform its intended function during an event in which the SSC might be needed.” Technical Guidance 9900 further describes that some types of preconditioning may be considered acceptable, but that “this preconditioning should have been evaluated and documented in advance of the surveillance.” Since the licensee had not performed an evaluation which justified that preconditioning of the valve was acceptable prior to completing the testing, the licensee’s surveillance testing sequence that cycled the valve prior to obtaining stroke time data constituted unacceptable preconditioning of the valve.

Additionally, the unacceptable preconditioning of the RHR valve was not in accordance with the licensee’s procedural guidance regarding IST. Licensee Nuclear Operating Procedure (NOP)-ER-3204, “Inservice Testing Program,” states, in part, “Maintenance activities should not be scheduled to influence the results of upcoming tests. Such actions, known as preconditioning, should be avoided.” In addition it also states, in part, “Care should be taken to ensure that procedures, surveillances, or tasks are not scheduled such that unacceptable preconditioning of a component prior to the inservice test occurs. Where unacceptable preconditioning would occur, the procedure/task should specify that an as found test be performed first.”

The licensee performed an investigation which revealed that, historically, these two surveillances had been completed in either sequence without significant differences in measured stroke time. As a result, the licensee determined that the preconditioning did not significantly affect the IST stroke timing of the valve. The licensee used this information to support an operability declaration for the system.

Analysis: The inspectors determined that stroking of the RHR minimum flow valve prior to as-found stroke timing constituted unacceptable preconditioning and a performance deficiency. Specifically, performing the IST surveillance test in this sequence may not accurately indicate potential valve degradation. The inspectors determined that the performance deficiency affected the Mitigating Systems Cornerstone, because it could mask the true as-found condition of a component designed to mitigate accidents. The inspectors evaluated the performance deficiency in accordance with Inspection Manual Change (IMC) 0612, Appendix B, “Issue Screening.” This performance deficiency was compared to, and was not similar to any of, the examples in IMC 0612, Appendix E, “Examples of Minor Issues,” but was characterized as more than minor because, if left uncorrected, it could lead to a more significant safety concern.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04,

“Phase 1 - Initial Screening and Characterization of Findings,” Table 3b for the Mitigating Systems Cornerstone. The inspectors determined the finding was of very low risk significance because it was not a design/qualification deficiency, did not represent a loss of system safety function, did not result in a loss of function of a single train for greater than its TS allowable outage time, did not result in a loss of function of nonsafety-related risk-significant equipment, and was not risk significant due to external events.

This finding has a cross-cutting aspect in the work control planning component of the Human Performance cross-cutting area (per IMC 0310 H.3(a)), because the licensee did not appropriately plan work activities for plant SSCs and components. Specifically, the licensee did not schedule the surveillance tests in the proper sequence to prevent unacceptable preconditioning of the valve.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion XI, Test Control, states, in part, that “A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.” Contrary to this requirement, on July 8, 2010, the licensee stroked 1E12-F0064A, RHR Pump A Min Flow Valve for test procedure SVI-E12-T1194 prior to performing IST stroke timing, and failed to prevent unacceptable pre-conditioning of the pump minimum flow valve. Because this finding is of very low safety significance and because it was entered into the licensee’s CAP as CR 10-79624, this violation is being treated as a Non-Cited Violation (NCV) consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000440/2010004-01; Unacceptable Preconditioning of RHR Valve Prior to ASME In-Service Testing.)

## 2. RADIATION SAFETY

### Cornerstones: Public and Occupational Radiation Safety

#### 2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

The inspection activities supplement those documented in Inspection Report (IR) 05000440/2010003, and constitute one complete sample as defined in IP 71124.01-05.

##### .1 Radiological Hazard Assessment (02.02)

###### a. Inspection Scope

The inspectors determined if there had been changes to plant operations since the last inspection that could result in a significant new radiological hazard for onsite workers or members of the public. The inspectors evaluated whether the licensee assessed the potential impact of these changes and has implemented periodic monitoring, as appropriate, to detect and quantify the radiological hazard.

The inspectors reviewed the last two radiological surveys from selected plant areas. The inspectors evaluated whether the thoroughness and frequency of the surveys were appropriate for the given radiological hazards.

The inspectors conducted walkdowns of the facility, including radioactive waste processing, storage, and handling areas to evaluate material conditions and performed independent radiation measurements to verify conditions.

The inspectors observed work in potential airborne areas and evaluated whether the air samples were representative of the breathing air zone. The inspectors evaluated whether continuous air monitors were located in areas with low background to minimize false alarms and representative of actual work areas. The inspectors evaluated the licensee's program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

b. Findings

No findings were identified.

.2 Instructions to Workers (02.03)

a. Inspection Scope

The inspectors selected various containers holding nonexempt licensed radioactive materials that may cause unplanned or inadvertent exposure of workers, and assessed whether the containers were labeled and controlled in accordance with 10 CFR 20.1904, "Labeling Containers," or met the requirements of 10 CFR 20.1905(g).

For work activities that could suddenly and severely increase radiological conditions, the inspectors assessed the licensee's means to inform workers of changes that could significantly impact their occupational dose.

b. Findings

No findings were identified.

.3 Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors observed several locations where the licensee monitors potentially contaminated material leaving the radiologically controlled area and evaluated the methods used for the control, survey, and release of materials from these areas. The inspectors also observed the performance of personnel surveying and releasing material for unrestricted use to determine if the methods used were in accordance with procedures and whether those procedures were sufficient to control the spread of contamination and prevent unintended release of materials from the site. The inspectors determined whether radiation monitoring instrumentation used for these surveys had appropriate sensitivity for the types of radiation present.

The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material to determine if there was guidance on how to respond to an alarm that indicates the presence of licensed radioactive material.

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. The inspectors assessed whether or not the licensee established a de facto “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.

The inspectors selected three sealed sources from the licensee’s inventory records and assessed whether the sources were accounted for and verified to be intact (i.e., they were not leaking their radioactive content).

The inspectors evaluated whether any transactions, since the last inspection, involving nationally tracked sources were reported in accordance with 10 CFR 20.2207.

b. Findings

No findings were identified.

.4 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors evaluated ambient radiological conditions (e.g., radiation levels or potential radiation levels) during tours of the facility. The inspectors assessed whether the conditions were consistent with applicable posted surveys, radiation work permits (RWPs), and worker briefings. The inspectors reviewed RWPs for work within airborne radioactivity areas with the potential for individual worker internal exposures. For these RWPs, the inspectors evaluated airborne radioactive controls and monitoring, including potential for significant airborne levels (e.g., grinding, grit blasting, system breaches, entry into tanks, cubicles, and reactor cavities). The inspectors assessed barrier (e.g., tent or glove box) integrity and temporary high-efficiency particulate air (HEPA) ventilation system operation for selected airborne radioactive material areas

The inspectors examined the licensee’s physical and programmatic controls for highly activated or contaminated materials (nonfuel) stored within spent fuel and other storage pools. The inspectors assessed whether appropriate controls (i.e., administrative and physical controls) were in place to preclude inadvertent removal of these materials from the pool.

The inspectors examined the posting and physical controls for selected high-radiation areas (HRAs) and very-high-radiation areas (VHRAs) to verify conformance with the occupational performance indicator (PI).

b. Findings

No findings were identified.

.5 Risk-Significant High-Radiation Area and Very High-Radiation Area Controls (02.06)

a. Inspection Scope

The inspectors discussed with the radiation protection (RP) manager the controls and procedures for HRAs and VHRAs. The inspectors discussed methods employed by the licensee to provide stricter control of VHRA access as specified in 10 CFR 20.1602,

“Control of Access to Very High-Radiation Areas,” and Regulatory Guide 8.38, “Control of Access to High and Very High-Radiation Areas of Nuclear Plants.” The inspectors assessed whether any changes to licensee procedures substantially reduced the effectiveness and level of worker protection.

The inspectors discussed the controls in place for special areas that have the potential to become VHRA during certain plant operations with first-line health physics (HP) supervisors (or equivalent positions having backshift HP oversight authority). The inspectors assessed whether these plant operations required communication beforehand with the HP group, so as to allow corresponding timely actions to properly post, control, and monitor the radiation hazards including re-access authorization.

The inspectors evaluated licensee controls for VHRA and areas with the potential to become a VHRA to ensure that an individual was not able to gain unauthorized access to the VHRA.

b. Findings

No findings were identified.

.6 Radiation Worker Performance (02.07)

a. Inspection Scope

The inspectors observed radiation worker performance with respect to stated RP work requirements. The inspectors assessed whether workers were aware of the radiological conditions in their workplace and the RWP controls/limits in place, and whether their performance reflected the level of radiological hazards present.

The inspectors reviewed a maximum of 10 radiological problem reports since the last inspection that found the cause of the event to be human performance errors. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. The inspectors discussed with the RP manager any problems with the corrective actions planned or taken.

b. Findings

No findings were identified.

.7 Radiation Protection Technician Proficiency (02.08)

a. Inspection Scope

The inspectors observed the performance of the RP technicians with respect to all RP work requirements. The inspectors evaluated whether technicians were aware of the radiological conditions in their workplace and the RWP controls/limits, and whether their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

The inspectors reviewed a maximum of 10 radiological problem reports since the last inspection that found the cause of the event to be RP technician error. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

b. Findings

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

The inspection activities supplement those documented in IR 05000440/2010003, and constitute one complete sample as defined in IP 71124.03-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the plant USAR to identify areas of the plant designed as potential airborne radiation areas and any associated ventilation systems or airborne monitoring instrumentation. Instrumentation review included continuous air monitors (continuous air monitors and particulate-iodine-noble-gas-type instruments) used to identify changing airborne radiological conditions such that actions to prevent an overexposure may be taken. The review included an overview of the respiratory protection program and a description of the types of devices used.

The inspectors reviewed USAR, TS, and emergency planning documents to identify location and quantity of respiratory protection devices stored for emergency use.

The inspectors reviewed the licensee's procedures for maintenance, inspection, and use of respiratory protection equipment including self-contained breathing apparatus (SCBA). Additionally, the inspectors reviewed procedures for air quality maintenance and the reported PIs to identify any related to unintended dose resulting from intakes of radioactive materials.

b. Findings

No findings were identified.

.2 Engineering Controls (02.02)

a. Inspection Scope

The inspectors reviewed the licensee's use of permanent and temporary ventilation to determine whether the licensee used ventilation systems as part of its engineering controls (in lieu of respiratory protection devices) to control airborne radioactivity. The inspectors reviewed procedural guidance for use of installed plant systems, such as containment purge, spent fuel pool ventilation, and auxiliary building ventilation, and assessed whether the systems are used, to the extent practicable, during high-risk activities (e.g., using containment purge during cavity flood up).

The inspectors selected installed ventilation systems used to mitigate the potential for airborne radioactivity, and evaluated whether the ventilation airflow capacity, flow path (including the alignment of the suction and discharges), and filter/charcoal unit efficiencies, as appropriate, were consistent with maintaining concentrations of airborne radioactivity in work areas below the concentrations of an airborne area to the extent practicable.

The inspectors selected temporary ventilation system setups (HEPA/charcoal negative pressure units, down draft tables, tents, metal “Kelly buildings,” and other enclosures) used to support work in contaminated areas. The inspectors assessed whether the use of these systems was consistent with licensee procedural guidance and as-low-as-is-reasonably-achievable (ALARA) concepts.

b. Findings

No findings were identified.

.3 Use of Respiratory Protection Devices (02.03)

a. Inspection Scope

For those situations where it is impractical to employ engineering controls to minimize airborne radioactivity, the inspectors assessed whether the licensee provided respiratory protective devices such that occupational doses are ALARA. The inspectors selected work activities where respiratory protection devices were used to limit the intake of radioactive materials, and assessed whether the licensee performed an evaluation concluding that further engineering controls were not practical and that the use of respirators was ALARA. The inspectors also evaluated whether the licensee had established means (such as routine bioassay) to determine if the level of protection (protection factor) provided by the respiratory protection devices during use was at least as good as that assumed in the licensee’s work controls and dose assessment.

The inspectors assessed whether respiratory protection devices used to limit the intake of radioactive materials were certified by the National Institute for Occupational Safety and Health/Mine Safety and Health Administration (NIOSH/MSHA) or have been approved by the NRC in accordance with 10 CFR 20.1703(b). The inspectors selected work activities where respiratory protection devices were used. The inspectors evaluated whether the devices were used consistent with their NIOSH/MSHA certification or any conditions of their NRC approval.

The inspectors reviewed records of air testing for supplied-air devices and SCBA bottles to assess whether the air used in these devices meets or exceeds Grade D quality. The inspectors reviewed plant breathing air supply systems to determine whether they meet the minimum pressure and airflow requirements for the devices in use.

The inspectors selected individuals qualified to use respiratory protection devices, and assessed whether they have been deemed fit to use the devices by a physician.

The inspectors selected several individuals assigned to wear a respiratory protection device and observed them donning, doffing, and functionally checking the device as appropriate. Through interviews with these individuals, the inspectors evaluated whether they knew how to safely use the device and how to properly respond to any

device malfunction or unusual occurrence (loss of power, loss of air, etc.). The inspectors reviewed training curricula for users of the devices.

The inspectors chose various respiratory protection devices staged and ready for use in the plant or stocked for issuance. The inspectors assessed the physical condition of the device components (mask or hood, harnesses, air lines, regulators, air bottles, etc.) and reviewed records of routine inspection for each. The inspectors selected several of the devices and reviewed records of maintenance on the vital components (e.g., pressure regulators, inhalation/exhalation valves, hose couplings). The inspectors assessed whether onsite personnel assigned to repair vital components had received vendor-provided training.

b. Findings

No findings were identified.

.4 Self-Contained Breathing Apparatus for Emergency Use (02.04)

a. Inspection Scope

Based on USAR, TS, and emergency operating procedure requirements, the inspectors reviewed the status and surveillance records of SCBAs staged in-plant for use during emergencies. The inspectors reviewed the licensee's capability for refilling and transporting SCBA air bottles to and from the control room and operations support center during emergency conditions.

The inspectors selected individuals on control room shift crews, and individuals from designated departments currently assigned emergency duties (e.g., onsite search and rescue duties) to assess whether control room operators and other emergency response and RP personnel (assigned in-plant search and rescue duties or as required by emergency operating procedures or the emergency plan) were trained and qualified in the use of SCBAs (including personal bottle change out). The inspectors evaluated whether personnel assigned to refill bottles were trained and qualified for that task.

The inspectors determined whether appropriate mask sizes and types were available for use (i.e., in-field mask size and type matched what was used in fit-testing). The inspectors selected various on-shift operators to determine whether they have no facial hair that would interfere with the sealing of the mask to the face and whether vision correction (e.g., glasses inserts or corrected lenses) were available as appropriate.

The inspectors reviewed the past 2 years of maintenance records for several SCBA units used to support operator activities during accident conditions and designated as "ready for service" to assess whether any maintenance or repairs on any SCBA unit's vital components were performed by an individual, or individuals, certified by the manufacturer of the device to perform the work. The vital components typically are the pressure-demand air regulator and the low-pressure alarm. The inspectors reviewed the onsite maintenance procedures governing vital component work to determine any inconsistencies with the SCBA manufacturer's recommended practices. For those SCBAs designated as "ready for service," the inspectors determined whether the required, periodic air cylinder hydrostatic testing was documented and up to date, and the retest air cylinder markings required by the U.S. Department of Transportation were in place.

b. Findings

No findings were identified.

.5 Problem identification and Resolution (02.05)

a. Inspection Scope

The inspectors reviewed CRs and other corrective action documents to determine whether problems associated with control and mitigation of in-plant airborne radioactivity were being identified at the appropriate threshold and were properly addressed for resolution in the licensee's CAP.

b. Findings

No findings were identified

2RS4 Occupational Dose Assessment (71124.04)

This inspection constituted a partial sample as defined in IP 71124.04-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the results of RP program audits related to internal and external dosimetry (e.g., licensee's quality assurance audits, self-assessments, or other independent audits) to gain insights into overall licensee performance in the area of dose assessment and focus the inspection activities consistent with the principle of "smart sampling."

b. Findings

No findings were identified.

.2 Internal Dosimetry (02.03)

Internal Dose Assessment – Airborne Monitoring

a. Inspection Scope

The inspectors reviewed the licensee's program for airborne radioactivity assessment and dose assessment, as applicable, based on airborne monitoring and calculations of derived air concentration. The inspectors determined whether flow rates and collection times for air sampling equipment were adequate to allow lower limits of detection to be obtained. The inspectors also reviewed the adequacy of procedural guidance to assess internal dose if respiratory protection was used. The licensee had not performed dose assessments using airborne/derived air concentration monitoring since the last inspection.

b. Findings

No findings were identified.

.3 Special Dosimetric Situations (02.04)

Dosimeter Placement and Assessment of Effective Dose Equivalent for External Exposures.

a. Inspection Scope

The inspectors reviewed the licensee's methodology for monitoring external dose in non-uniform radiation fields or where large dose gradients exist. The inspectors evaluated the licensee's criteria for determining when alternate monitoring, such as use of multi-badging, was to be implemented.

The inspectors reviewed dose assessments performed using multi-badging to evaluate whether the assessment was performed consistent with licensee procedures and dosimetric standards.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

40A1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Heat Removal System performance indicator for the period from the third quarter 2009 through the second quarter 2010. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of the third quarter 2009 through the second quarter 2010 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI heat removal system sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Performance Index - Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Residual Heat Removal System performance indicator for the period from the third quarter 2009 through the second quarter 2010. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of the third quarter 2009 through the second quarter 2010 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI residual heat removal system sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Cooling Water Systems performance indicator for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of the third quarter 2009 through the second quarter 2010 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI cooling water system sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection**

.1 Routine Review of Items Entered Into the CAP

a. Inspection Scope

As part of the various baseline inspection procedures 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: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences 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 Attachment to this report.

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

No findings were identified.

.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 were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period from January 2010 through June 2010, although some examples expanded beyond those dates where the scope of the trend warranted.

The reviews also included issues documented outside of the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and maintenance rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

This review constituted a single semi-annual trend inspection sample as defined in IP 71152-05.

b. Findings

No findings were identified.

.4 In-depth Review- Technical Specifications Compliance

a. Inspection Scope

The inspectors performed an annual follow-up of selected issues sample of the licensee's process for performing and documenting TS compliance. The inspectors reviewed documentation in the licensee's CAP, official narrative operating logs and LCO tracking module, for compliance with site-specific administrative, operational, and licensing procedures specifically to assess for proper control and documentation of the entry and exit of LCO Conditions and Required Actions. Documents reviewed are listed in the Attachment to this report.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV for the licensee's failure to follow the requirements of TS LCO 3.0.2 by not entering TS LCO 3.3.5.1 Condition A and TS 3.3.6.1 Condition A when

reactor vessel level instruments 1B21N0673C and 1B21N0674C were declared inoperable. Technical Specification LCO 3.0.2 requires that "Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6."

Description: On August 9, 2010, during a review of operator narrative logs, the inspectors noted a log entry that identified the use of a TS Surveillance Requirement (SR) Note to support the performance of WO #200322765, "PDP – 'New PM' Replace Rosemount STU Card." This WO included a step to acquire as-found data of the card being replaced prior to its removal. The method of acquiring this as-found data included performing portions of surveillance test procedure SVI-B21-T0187C, ECCS/HPCS RPV Water Level 2 and Level 8 Channel C Functional for 1B21-N673C. Additionally, this WO step stated, "Sign Off/Close Surveillance Instruction as No Credit." Surveillance test SVI-B21-T0187C renders Reactor Vessel Level instruments 1B21N0673C and 1B21N0674C inoperable. This surveillance references the TS Surveillance Notes associated with SR 3.3.5.1 and 3.3.6.1. These SR Notes state, in part, "When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed." The licensee utilized the SR Note during the performance of as-found checks using the surveillance and did not enter the Conditions and Required Actions for the 22 minutes it took to perform the test.

The inspectors reviewed the licensee's use of the surveillance notes and determined that the delay in entering the Conditions and Required Actions was inappropriate because the surveillance was being performed to satisfy WO requirements, not TS-required SRs. As a result, the licensee declared the instruments inoperable but did not enter the Conditions or Required Actions for the associated LCOs. This is contrary to the requirements of TS LCO 3.0.2 which states "Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6." Limiting Condition of Operation 3.0.5 and LCO 3.0.6 did not apply in this situation.

An additional review of recent narrative log entries identified several instances of misapplication of the same surveillance notes. The longest time period the LCO was not adhered to was 4 hours and 47 minutes. In combination with the replacement and subsequent operability testing, the instrument(s) were inoperable on several different occasions, for a sum total of 13 hours and 29 minutes. The LCO allows the instrument(s) to be inoperable for up to 24 hours before any additional actions are required. The inspectors did not identify any instances where the LCO Required Action times were exceeded.

Analysis: The inspectors determined that the licensee's failure to follow TS LCO 3.0.2 constituted a performance deficiency. Specifically, the licensee did not enter the LCOs and Required Actions for inoperable TS equipment. The inspectors evaluated the performance deficiency in accordance with IMC 0612, Appendix B, "Issue Screening." This performance deficiency was not similar to any of the examples in IMC 0612, Appendix E, "Examples of Minor Issues," but was characterized as more than minor because it impacted the Equipment Performance attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage); and if left uncorrected it could lead to a more significant safety concern.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of findings," Table 3b for the Mitigating Systems Cornerstone. The inspectors determined the finding was of very low safety significance (Green) because it was not a design/qualification deficiency, did not represent a loss of system safety function, did not result in a loss of function of a single train for greater than its TS-allowable outage time, did not result in a loss of function of nonsafety-related risk-significant equipment and was not risk significant due to external events.

This finding has a cross-cutting aspect in the decision making component of the Human Performance cross-cutting area (per IMC 0310 H.1(b)), because the licensee did not use conservative assumptions to ensure the proposed action was safe. Specifically, the licensee incorrectly used the TS SR Note to satisfy maintenance requirements.

Enforcement: The inspectors determined that the finding represents a violation of regulatory requirements because it involved improper implementation of TS. The licensee utilized TS SR Notes while performing surveillances to satisfy maintenance WOs. In accordance with TS LCO 3.0.2, in these cases entry into TS LCO 3.3.5.1 Condition A and 3.3.6.1 Condition A is required. Contrary to the above, the licensee did not enter the Conditions and Required Actions immediately upon declaring TS-required instrumentation inoperable. Because this finding is of very low safety significance and because it was entered into the licensee's CAP as CR 10-81162, this violation is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000440/2010004-02; Failure to Comply with Technical Specification LCOs When Reactor Vessel Level Instruments Were Declared Inoperable.)

#### 40A3 Follow-up of Events and Notices of Enforcement Discretion (71153)

##### .1 (Closed) Licensee Event Report 05000440/2010-003: Loss of Control Rod Drive Header Pressure Results in Manual RPS Actuation

###### a. Inspection Scope

On May 11, 2010, a manual actuation of RPS was inserted to comply with TS because of multiple accumulators being inoperable coincident with the inability to restore control rod drive (CRD) charging header pressure. A trip unit failure caused an invalid loss-of-coolant accident (LOCA) initiation signal and resulted in the load shed of the XH12 stub bus. Due to an abnormal electrical lineup, both CRD pumps tripped and they were unable to be restarted. The licensee replaced the trip unit and restored the CRD system to its normal configuration. The licensee documented the failed equipment in CR 10-76727. The inspectors reviewed this Licensee Event Report (LER) and did not identify any findings or violations of NRC requirements. Documents reviewed as part of this inspection are listed in the attachment. This LER is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

.2 (Closed) Retraction of Event Notification 45815: Loss of Safety Function to Control the Release of Radioactive Material

a. Inspection Scope

On April 6, 2010, the licensee initiated an event notification (EN) related to a loss of safety function involving five containment isolation valves. Specifically, the licensee reported that they had a potential loss of safety function for the ability to control the release of radioactive material. This was due to a loss of power to the LOCA isolation logic associated with containment penetration single valve isolations. On June 6, 2010, the licensee retracted this notification. The licensee evaluated the condition and determined the containment penetrations were still able to perform their design function. The inspectors reviewed the information contained in the evaluation, and did not identify any findings or violations related to the licensee's retraction. This EN retraction is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

4OA5 Other Activities

.1 (Closed) Unresolved Item 05000440/2010003-06: Failure to Perform a Hydrostatic Test in Accordance with ASME Code

a. Inspection Scope

This Unresolved Item (URI) is associated with the licensee's actions following a repair to ESW underground piping in the spring of 2009. The licensee conducted only a leak test of the repairs rather than a hydrostatic test, and the coupling used to repair the pipe leak was not hydrostatically tested for 10 minutes prior to installation in the system. After further review of the repair process and interaction with the ASME code committee, the inspectors determined that the Dresser coupling used to repair the pipe did not meet the ASME code definition of a 'component,' and was therefore not required to be hydrostatically tested. This URI is closed and no further actions are required.

.2 Institute of Nuclear Power Operations Plant Assessment Report Review

a. Inspection Scope

The inspectors reviewed the final report for the Institute of Nuclear Power Operations (INPO) plant assessment of Perry station conducted in August 2009. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and to verify whether any significant safety issues were identified that required further NRC follow-up.

b. Findings

No findings of significance were identified.

#### 4OA6 Meetings

##### .1 Exit Meeting

The inspectors presented the inspection results to the Site Vice-President, Mr. Mark Bezilla, and other members of licensee management on October 6, 2010. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

##### .2 Interim Exit Meetings

An interim exit meeting was conducted for radiological hazard assessment and exposure controls, in-plant airborne radioactivity control and mitigation, and occupational dose assessment with Mr. T. Jardine and other members of the Perry staff on July 16, 2010. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

#### 4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy, for being dispositioned as an NCV.

- On August 25, 2010, the licensee identified a failure to meet the requirements of TS 5.5.9, Diesel Fuel Oil Testing Program requirements by failing to conduct the test for viscosity at the prescribed temperature when receiving new fuel oil. The cause was a failure to make appropriate procedure changes when the site implemented a license change request that revised this TS requirement. Specifically, in September 1990, when the license change request was implemented by the site, the temperature specified in SR 3.8.3.3 changed from 100 °F to 40 °C. Following this change, the site did not recognize that the fuel oil viscosity test procedures containing the prescribed testing temperature needed to be changed to align with the new TS requirements, and therefore, the procedures incorrectly continued to reflect the temperature cited in the previous TS version. Licensee personnel had been testing the fuel oil in accordance with these procedures for approximately 20 years.

Corrective actions include sampling of all three fuel storage tanks for the diesel generators, testing the samples for viscosity at the correct temperature requirement, and implementation of procedural changes to incorporate the revised temperature. All other TS-required surveillances of fuel oil properties were properly performed and completed as required to ensure current operability. The violation was determined to be of low safety significance through a licensee evaluation of risk. The licensee entered this performance deficiency into the CAP as CR 10-81724, Fuel Oil Samples Not Analyzed per Tech Specs.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

M. Bezilla, Vice President Nuclear  
D. Evans, Work and Outage Management Director  
J. Grabnar, Site Engineering Director  
H. Hanson, Performance Improvement Director  
T. Jardine, Operations Manager  
K. Krueger, Plant General Manager  
P. McNulty, Radiation Protection Manager  
M. Stevens, Maintenance Director  
J. Tufts, Chemistry Manager

#### Other

C. O'Clare, Ohio Department of Health

### LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

#### Opened and Closed

05000440/2010004-01	NCV	Unacceptable Preconditioning of RHR Valve Prior to ASME In-Service Testing (1R22)
05000440/2010004-02	NCV	Failure to Comply with Technical Specification LCOs When Reactor Vessel Level Instruments Were Declared Inoperable (4OA2.4)

#### Closed

05000440/2010003-06	URI	Failure to Hydrostatically Test Replacement Components in Accordance with ASME (Section 4OA5.1)
05000440/2010-003	LER	Loss of Control Rod Drive Header Pressure Results in Manual RPS Actuation (Section 4OA3.1)

#### Discussed

45815	EN	Retraction of Event Notification 45815: Loss of Safety Function to Control the Release of Radioactive Material (Section 4OA3.2)
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## 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

CR 10-80444; Security Project – North-Side Concrete ‘T’ Wall Installation Issues  
Drawing 743-0013-00000; Topography and Storm Drain Composite; Revision D  
EER 600631290; Perform Evaluation to Determine Locations of Drainage Gaps in Installed  
T-Walls; dated August 4, 2010

### 1R04 Equipment Alignment

CR 08-42257; Annulus Exhaust Gas Treatment System (AGETS) "A" Train Low Flow  
Adjustment; dated June 20, 2008  
CR 10-72614; Unplanned Fire Suppression Impairment for Annulus Exhaust Gas Treatment  
System; dated March 4, 2010  
CR 08-34483; Annulus Exhaust Gas Treatment System Flow Indication Low Flow; dated  
January 29, 2008  
CR 07-31871; AEGTS B Discharge Damper Is Not Functioning Correctly; dated  
December 21, 2007  
Drawing 912-0605-00000; Reactor Building Annulus Exhaust Gas Treatment; Revision W  
PYBP-POS-2-2; Annulus Exhaust Gas Treatment System A (B) Outage Protected Equipment  
Posting Checklist; Revision 10  
PNPP No. 10392; Annulus Exhaust Gas Treatment System A (B) Outage Protected Equipment  
Posting Checklist; dated July 14, 2009  
SOI-M15; AEGTS System; Revision 8  
VLI-M23/24; MCC, Switchgear and Miscellaneous Electrical Equipment Area HVAC System;  
Revision 7  
CR 10-82114; 0M23C0002B Did Not Trip with a B Train Trip Signal Present; dated  
September 2, 2010  
CR 10-82118; Replacement Solenoid Valve Mount Screw Holes Are Not Threaded; dated  
August 31, 2010  
Drawing 912-0609-00000; MCC Switchgear and Misc Electrical Equipment Areas HVAC  
System and Battery Room Exhaust; Revision AA  
Perry Plant Health Report 2010-2 for P42 – Emergency Closed Cooling System  
SOI-P42; Emergency Closed Cooling System; Revision 16  
VLI-P42; Emergency Closed Cooling System; Revision 15  
Drawing 302-0621-00000; Emergency Closed Cooling System; Revision SS  
Drawing 208-0041-00002; Reactor Protection System MG Set S001B  
Drawing 208-0041-00001; Reactor Protection System MG Set S001A  
CR 10-81707; Overheating on Voltage Regulator for RPS MG Set B; dated August 25, 2010

### 1R05 Fire Protection (Annual/Quarterly)

PAP-1910; Fire Protection Program; Revision 19  
P54-24; Calculation of Combustible Loading and Allowable Limits for Fire Loading; Revision 4  
FPI-0IB; Pre-Fire Plan Instruction – Intermediate Building; Revision 5  
FPI-0CC; Pre-Fire Plan Instruction – Control Complex; Revision 8  
CR 10-80981; Documentation of NRC Questions; dated August 9, 2010  
CR 10-81985; Response to Questions from the NRC Resident Inspector; dated August 27, 2010  
FPI-1AB; Pre-Fire Plan Instruction – Auxiliary Building; Revision 3  
CR 10-82504; NRC Question Regarding Pen Seals in AX 620' West; dated September 10, 2010

### 1R06 Internal Flooding

PAP-0204; Housekeeping/Cleanliness Control Program; Revision 24  
ARI-H13-P601-0018; Leak Detection; Revision 13  
NOP-OP-1012; Material Readiness and Housekeeping Inspection Program; Revision 5  
CR 10-77685; Various Through Wall Piping Leaks on N71; dated June 3, 2010  
Drawing 911-0617; Auxiliary Building Drains; Revision F

### 1R11 Licensed Operator Regualification Program

PYBP-PTS-0005; Operator Continuing Training Program Administration; Revision 25  
PYBP-POS-0027; Operator Actions from Memory; Revision 0, dated December 3, 2008  
Simulator Exercise Guide OTLC-3058201010\_PY\_SGC1; Cycle 10 2010 Evaluated Scenario C1; Revision 0  
CR 10-80980; Unsat Training Observation – Ops Performance Improvement Time Not Properly Used; dated August 9, 2010  
CR 10-81725; Unqualified Individuals Signing as Training Coordinators; dated August 25, 2010

### 1R12 Maintenance Effectiveness

WO 200284303; Chg Oil Fltrs Combustion Gas Purge Unit; dated July 21, 2010  
CR 10-79817; Wrong Oil Added to CGMC Reservoir; dated July 17, 2010  
CR 10-80089; NRC-ID. No FME High Risk Brief Sheet in Work Order; dated July 22, 2010  
CR 10-80169; Failed PMT for CGMC B Aux Oil Pump; dated July 24, 2010  
Clearance EPY-M25-0005; Control Room HVAC Supply Plenum; dated September 1, 2010  
LCOTR# A10-M25-032; M25/26 Inoperable, Period 5 Week 10; dated August 30, 2010  
CR 10-81952; Relay Contacts do not Change State; dated August 30, 2010  
CR 10-81957; Loose Fittings on Low Flow Switch; dated August 30, 2010  
Drawing 912-0610-00000; Control Room HVAC and Emergency Recirculation System; Revision FF  
CR 10-82639; Maintenance HPCS Work Start Deficiencies; dated September 13, 2010  
CR 10-82715; Inadequate Order for Div 3 Fuel Oil Day Tank Work; dated September 16, 2010  
CR 10-82864; Grease Fitting Damaged during Disassembly; dated September 19, 2010  
CR 10-82970; Less Than Adequate Contingency Planning for Div 3 DG Inspections; dated September 21, 2010  
CR 10-82989; FME Concerns Identified in Div 3 DG Room; dated September 20, 2010  
CR 10-83194; PMT Could Not Be Worked as Written; dated September 24, 2010  
WO 200430281; Rebuild Ball Valves to Small and Large Seals  
CR 10-83134; Lower Airlock Door Air Supply Flex Hoses Possibly Defective  
CR 10-82842; Lower Airlock Pneumatic System Pressure Drop Test Failed

CR 10-76252; Lower Containment Airlock Reactor Door  
CR 09-69338; Upper Containment Airlock Reactor Door

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

NOP-OP-1007; Risk Management; Revision 7  
CR 10-80396; Perry Not Notified of Conservative Grid Ops; dated July 28, 2010  
CR 10-81724; Finding – Fuel Oil Samples not Analyzed per Tech Specs; dated August 25, 2010  
CR 10-81727; Diesel Fuel Oil Sample Analysis Completion Dates Inconsistent; dated August 25, 2010  
CR 10-81733; Procedure Steps Signed as Performed Inappropriately; dated August 25, 2010  
CR 10-82658; Water/Steam Leak From 1N27F505D (RFBP D Discharge Check Valve); dated September 15, 2010  
WO 200430709; Wire Wrap/Inject Inspection Flange; dated September 17, 2010  
WO 200430710; Remove Insulation @ Valve; dated September 16, 2010  
ECP 10-0570-000; Leak Sealant Device on Reactor Feedwater Booster Pump 'D' Discharge Check Valve (1N27F0505D); Revision 0  
ECP 10-0570-001; Install and Inject Leak Sealant Device on Reactor Feedwater Booster Pump 'D' Discharge Check Valve (1N27F0505D); Revision 1  
CR 10-82682; Div 3 DG Generator Inter Pole Side Plate Movement; dated September 15, 2010  
CR 10-82992; Div 3 Diesel Generator – Migrating Exciter Field Core Plates; dated September 22, 2010  
WO 200430766; Remove Generator Rotor, Inspect for Loose Wedge Studs; dated September 15, 2010

#### 1R15 Operability Evaluations

CR 10-78672; 1M43 Agastat Relay Qualification Issue; dated June 22, 2010  
CR 10-81023; M52 Turning Vanes Degraded; dated August 10, 2010  
Prompt Functionality Assessment for Degraded TSC Ventilation Supply Fan Turning Vanes; dated August 13, 2010  
Prompt Operability Determination for Diesel Generator Building Ventilation Systems; dated July 15, 2010  
CR 10-81973; No Insulation Inside Plenum; dated August 30, 2010  
eSOMS Narrative Logs dated September 2, 2010  
Prompt Operability Determination for ECC to FPCC Heat Exchanger Bypass Valve Stroke Time Testing Failure; August 24, 2010  
CR 10-81623; OP42F0255B Failed Stroke Closed Test; dated August 23, 2010

#### 1R18 Permanent/Temporary Modifications

Perry Plant Health Report 2010-2 for Temporary Modifications  
NOP-CC-2003; Engineering Changes; Revision 14  
NORM-CC-2001; Engineering Change Process Flowcharts; Revision 00  
ECP 10-0020-0000; Reference Documents - Hot Surge Tank Low Level Alarm from Level Transmitter Signal; Revision 0  
ECP 10-0020-0001; Hot Surge Tank Low Level Alarm from Level Transmitter Signal; Revision 3  
WO 200399695; Hot Surge Tank Low Level Alarm; dated May 15, 2010  
NOBP-ER-3003-01; Temporary Modification Review Checklist; Revision 00  
CR 09-67788; Host Surge Tank (HST) Level Low Alarm Locked In; dated November 15, 2009  
Drawing 302-0081-00000; Feedwater; Revision BBB

Drawing 302-0101-00000; Condensate System; Revision TT  
Drawing 208-0149-00002; MDFP Auto Start Logic & RFBP Auto Start Logic; Revision S  
CR 10-82802; Potential Single Failure Vulnerability with Hot Surge Tank Temp Mod; dated  
September 16, 2010

#### 1R19 Post-Maintenance Testing

SVI-B21-T0137F; ECCS Drywell Pressure High Channel "F" Functional for 1B21-N694F;  
Revision 5  
PTI-M23-P0005; Emergency Service Water Pump House Ventilation System Train B Damper  
Stroking; Revision 5  
WO 200323496; Replace Rosemount MTU Card; dated August 11, 2010  
WO 200323644; Replace Keylock Control Switch 1B21C-S27A; dated August 4, 2010  
WO 200340398; Replace and Perform Calibration Check of 1M15D0001B Instrumentation;  
dated August 25, 2010  
WO 200327715; Replace AEGT Fan 'B' Motor; dated August 25, 2010  
WO 200290571; Replace SLS/MTR/Oil Hydramotor at ESW "B" Outlet Damper; dated  
September 6, 2010  
WO 200333304; MERP – Replace Utility Station w/NUS; dated September 6, 2010  
CR 10-81632; Temperature Switch Found Tripped; dated August 23, 2010  
CR 10-81633; RFACR: Damaged Field Conductor to Motor; dated August 23, 2010  
WO 200328863; Replace Cntrl Relays in EH1304 Cubicle; dated September 20, 2010  
SOI-R22; Metal Clad Switchgear 5-15 KV; Revision 25  
CR 10-82852; Unexpected Reading Obtained during Functional Testing; dated September 19,  
2010  
SVI-E22-T1319; Diesel Generator Start and Load Division 3; Revision 15  
CR 10-83148; Div 3 Emergency Diesel Generator Failure to Start During Testing; dated  
September 24, 2010  
CR 10-83163; Generator Stator Temperature Monitor is Erratic and Unreliable; dated  
September 24, 2010  
CR 10-83181; Div 3 DG Additional Tagging Points Requested; dated September 24, 2010

#### 1R22 Surveillance Testing

SVI-E12-T2001; RHR A Pump and Valve Operability Test; Revision 26  
SVI-E12-T1194; LPCI Pump A Discharge Low Flow (Bypass) Channel Functional for 1E12-  
N652A; Revision 8  
SVI-E51-T2001; RCIC Pump and Valve Operability Test; Revision 32  
CR 01-79624; NRC-Identified Concern for Pre-conditioning Valve During Surveillance Testing;  
dated July 12, 2010  
NOP-ER-3204; Inservice Testing Program; Revision 1  
eSOMS Narrative Logs dated July 7-8, 2010  
SVI-P45-T2002; ESW Pump B and Valve Operability Test; Revision 26  
SVI-R10-T5227; Off-Site Power Availability Verification; Revision 2

## 2RS1 Radiological Hazard Assessment and Exposure Controls

CR 09-56065; Containment Vessel Drywell Purge Degraded Flows Impacting Refuel Floor; dated March 25, 2009  
CR 09-57294; Boundary Exceeded Radiological Controlled Area (RCA); dated April 16, 2009  
CR 09-60436; Dose Rates in the P5480405 Condensate Backwash Receiving Tank Higher than Expected; dated June 11, 2009  
CR 09-62628; Radioactive Material Found Outside the RCA; dated August 2, 2009  
CR 09-63398 and Associated Apparent Cause Evaluation; Platform Found Outside with Fixed Contamination; dated August 18, 2009  
CR 09-66069; RISB Radioactive Material Inventory Discrepancies; dated October 16, 2009  
CR 10-76774; Radiological Issues Associated with Division 2 ECC LOCA Initiation; dated May 11, 2010  
CR-09-54403; RFO-12 Elevated Airborne Levels During Separator Lift; dated February 28, 2009  
HPI-C0014; Radlock key Issue; Revision 01  
HPI-H0004; Identification of Radioactive Materials and Release of Materials from RCAs; Revision 22  
HPI-K0009; Operation of the WARF, RISB and OSSC Yard; Revision 0  
HPI-L0004; Source Control Documentation and Inventory; Revision 8  
NOPB-NF-3102; Control of Non-Special Nuclear Material in the Fuel Pools; Revision 00  
NOP-OP-4101; Access Controls for Radiologically Controlled Areas; Revision 01  
NOP-OP-4102; Radiological Postings, Labeling, and Markings; Revision 05  
NOP-OP-4107; Radiation Work Permit; Revisions 4 and 5  
NRC Form 748; National Source Tracking Transaction Report; dated January 12, 2009  
NSTS Annual Inventory Reconciliation; dated September 9, 2009, and January 29, 2010  
PNPP No. 10280; Sealed Source Leak Test Data Sheet HPI-L0004; dated January 13, 2010  
PNPP No. 7445; Sealed Source Leak Test Data Sheet ORM 6.4.2; dated January 13, 2010  
SVI-E31-T5190; Sealed Source Leak Test and Inventory; Revision 5  
TEDE ALARA Evaluations for ALARA Plan Nos. 09-6018-02, 09-6041-00 and 10-0066; dates October 2008 and February 2010

## 2RS3 In-Plant Airborne Radioactivity Control and Mitigation

Air Sample Records/Collection and Evaluation Forms for Various Work Activities and Locations; Various Dates in March and April 2009  
CR 09-57025; Air Sampling Equipment Found with Expired Calibration; dated April 09, 2009  
EP-Emergency Plan for Perry Nuclear Power Plant Docket Nos. 50-440; Revision 30  
HPI-G0007; Maintenance of Respiratory Protective Equipment and Operation of the Respirator Cleaning / Issue Facilities; Revision 21  
HPI-G0008; Requalification of Respirators; Revision 07  
HPI-L0003; Equipment History; Revision 06  
HRI-0003; Respirator Qualification Health Assessment; Revision 02  
NOP-OP-4301; Respiratory Protection Program; Revision 01  
NOP-OP-4302; Issuing Respiratory Protection; Revision 00  
NOP-OP-4303; Respirator Quantitative Fit Test Portacount PRO 8030; Revision 01  
NOP-OP-4310; Firehawk M7 Self Contained Breathing Apparatus; Revision 04  
NOP-OP-4702; Air Sampling; Revision 01  
PSI-0022; Emergency Plan Training program; Revision 03  
PYBP-RPS-0038; Radiologically Controlled Area HEPA Ventilation and HEPA Vacuum Unit Program; Revision 01

#### 2RS4 Occupational Dose Assessment

ALARA Plan 09-6040; Suppression Pool Cleaning and Inspection; Revision 03  
NOP-OP-4204; Special External Exposure Monitoring; Revision 03  
NOP-OP-4204-04; Effective Dose Equivalent Dose Determination; Revision 01  
NOP-OP-4205; Dose Assessment; Revision 03  
NOP-OP-4206; Bioassay Program; Revision 00  
NOP-OP-4503; Personnel Contamination Monitoring; Revision 02  
Radiological Engineering Assessment; Source term Determination for Cycle 12 Operations;  
Undated  
RWP 09-6040; RFO-12 Suppression Pool Diving Activities; Revision 03

#### 4OA1 Performance Indicator Verification

NOBP-LP-4012; NRC Performance Indicators; Revision 3  
NOBP-LP-4012-06; MSPI Data Sheets for Heat Removal System from July 2009 to June 2010;  
Revision 2  
NOBP-LP-4012-07; MSPI Data Sheets for Residual Heat Removal System from July 2009 to  
June 2010; Revision 2  
NOBP-LP-4012-19; MSPI Data Sheets for Emergency Service Water from July 2009 to  
June 2010; Revision 2  
Mitigating Systems Performance Index Basis Document; Revision 4  
PYBP-DES-0011; Mitigating Systems Performance Index; Revision 1  
eSOMS Narrative Logs; July 2009 to June 2010  
List of CRs for all MSPI monitored systems; July 2009 to June 2010  
MSPI Derivation Reports for all MSPI monitored systems; June 2010

#### 4OA2 Identification and Resolution of Problems

CRs for the period January 1, 2010, through June 30, 2010  
CR 10-81162; Potential Misapplication of TS Note; dated August 12, 2010  
eSOMS Narrative Logs; July 2010, to August 2010  
eSOMS Action Tracking; July 2010 to August 2010  
WO 200322765; PDP – “New PM” Replace Rosemount STU Card; dated August 9, 2010  
SVI-B21-T0187C, ECCS/HPCS RPV Water Level 2 and Level 8 Channel C Functional for  
1B21-N673C; Revision 6

#### 4OA3 Follow-up of Events and Notices of Enforcement Discretion

LER 2010-003; Loss of Control Rod Drive Header Pressure Result in Manual RPS Actuation;  
dated July 12, 2010  
CR 10-74904; During SVI-E12T0146 Performance, Operations Received Unexpected  
Annunciators; dated April 4, 2010

#### 4OA7 Licensee-Identified Findings

CR 10-81724; Fuel Oil Samples not Analyzed per Tech Specs; dated August 25, 2010

## LIST OF ACRONYMS USED

AEGTS	annulus exhaust gas treatment system
ALARA	as-low-as-reasonably-achievable
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CFR	<i>Code of Federal Regulations</i>
CR	condition report
ECC	emergency closed cooling
EDG	emergency diesel generator
ESW	emergency service water
FENOC	FirstEnergy Nuclear Operating Company
HEPA	high-efficiency particulate air
HP	health physics
HPCS	high pressure core spray
HRA	high radiation area
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IST	inservice testing
LCO	limiting condition for operation
LER	Licensee Event Report
LPCI	low pressure core injection
MSPI	mitigating systems performance index
NCV	non-cited violation
NEI	Nuclear Energy Institute
NIOSH/MSSHA	National Institute for Occupational Safety and Health/ Mine Safety and Health Administration
NOP	Nuclear Operating Procedure
NRC	Nuclear Regulatory Commission
ONI	Off-Normal Instruction
PI	performance indicator
PM	post-maintenance
RCIC	reactor core isolation cooling
RHR	residual heat removal
RP	radiation protection
RPS	reactor protection system
RWP	radiation work permit
SCBA	self-contained breathing apparatus
SDP	Significance Determination Process
SR	surveillance requirement
SSC	structure, system, or component
SVI	Surveillance Instruction
TS	Technical Specification
USAR	Updated Safety Analysis Report
VHRA	very high radiation area
WO	work order

M. Bezilla

-2-

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Sincerely,

**/RA/**

Jamnes L. Cameron, Chief  
Branch 6  
Division of Reactor Projects

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

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Letter to M. Bezilla from J. Cameron dated October 29, 2010

SUBJECT: PERRY NUCLEAR POWER PLANT NRC INTEGRATED  
INSPECTION REPORT 05000440/2010004

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