



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
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November 1, 2011

Mr. Mark Bezilla
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Perry Nuclear Power Plant
P. O. Box 97, 10 Center Road, A-PY-290
Perry, OH 44081-0097

**SUBJECT: PERRY NUCLEAR POWER PLANT NRC INTEGRATED INSPECTION
REPORT 05000440/2011004**

Dear Mr. Bezilla,

On September 30, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed a routine inspection at your Perry Nuclear Power Plant. The enclosed report documents the results of this inspection, which were discussed on October 13, 2011, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, one NRC-identified and two self-revealed findings of very low safety significance were identified. Additionally, one Severity Level IV violation was identified by the inspectors. The findings involved violations of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as non-cited violations (NCVs) in accordance with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the subject or severity of any 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 characterization 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 Perry Nuclear Power Plant.

M. Bezilla

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

Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000440/2011004
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-440

License No: NPF-58

Report No: 05000440/2011004

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Perry Nuclear Power Plant, Unit 1

Location: Perry, Ohio

Dates: July 1, 2011, through September 30, 2011

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Enclosure

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SUMMARY OF FINDINGS

Inspection Report (IR) 05000440/2011004, 07/01/2011 – 09/30/2011; Perry Nuclear Power Plant: Maintenance Risk Assessment and Emergent Work Control; Radiological Hazard Assessment and Exposure Controls; Occupational Dose Assessment; and Performance Indicator Verification.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One NRC-identified and two self-revealed findings of very low safety significance (Green) were identified. The findings were determined to involve violations of NRC requirements. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Additionally, one Severity Level IV violation of regulatory requirements was identified by the inspectors. The 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. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. A self-revealed finding of very low safety significance and associated Non-Cited Violation (NCV) of 10 CFR 50.65(a)(4) was apparent in the licensee's failure to accurately assess plant risk during maintenance activities. The inspectors determined that the licensee failed to correctly identify the plant risk condition during maintenance on the 'A' emergency service water (ESW) pump when the pump packing gland follower was replaced following a packing replacement. Specifically, there was a 45 minute period of time that the licensee's declared plant risk was in a GREEN status before the pump was retested and found to be unreliable for long term operations and the plant risk was returned to YELLOW status. The licensee entered the issue associated with their failure to correctly assess the plant risk condition into their corrective action program (CAP).

The performance deficiency was determined to be more than minor because the finding was similar to IMC 0612 Appendix E, Example 7.e, and resulted in actual plant risk being in a higher licensee-established risk category than declared. The finding was of very low safety significance because the risk deficit, or incremental core damage probability deficit (ICDPD) was $< 1E-6$. This finding had a cross-cutting aspect in the area of Human Performance, Decision-Making because the licensee did not use conservative assumptions in decision making nor adopt a requirement to demonstrate that the proposed action is safe in order to proceed. Specifically, the licensee chose to minimize system unavailability time and as a result did not perform the post-maintenance test to verify that the 'A' ESW pump was available prior to lowering declared plant risk. (H.1(b)) (Section 1R13)

Cornerstone: Occupational and Public Radiation Safety

- Green. The inspectors reviewed a self-revealed finding of very low safety significance and an associated NCV of Technical Specification 5.7.1 for the failure of workers to

comply with established radiological protective measures as specified for entry into and work within high radiation areas. The issue has been entered into the licensee's corrective action program as condition reports (CR) 11-93976 and CR 11-94374. Corrective actions were implemented to address personal accountability and evaluate the need for procedure improvements.

The inspectors reviewed the guidance in IMC 0612 Appendix E, "Examples of Minor Issues," and determined that the issue was more than minor because the performance deficiency was similar to Example 6(h) in the guidance document. Using IMC 0609 Attachment C for the Occupational Radiation Safety SDP, the inspectors determined that the finding was of very low safety significance because the finding did not involve: (1) As-Low-As-Is-Reasonably-Achievable (ALARA) planning and controls; (2) a radiological overexposure; (3) a substantial potential for an overexposure; and there was no compromised ability to assess dose. The primary cause of this finding was related to the cross-cutting aspect of problem identification and resolution in the component of the corrective action program in that the licensee failed to take the appropriate corrective actions to address safety issues in a timely manner, commensurate with their safety significance and complexity. Specifically, the licensee had previously identified issues with the effectiveness of radiological briefs for access to high radiation areas on four recent occasions. (P.1(d)) (Section 2RS1)

- Green. The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 20.1201(c) for the failure to accurately assess occupational dose specific to effective dose equivalent (EDE) determinations. The issue has been entered into the licensee's CAP as CR 11-02336. Corrective actions included a review of applicable guidance and revisions to applicable procedures.

The inspectors reviewed the guidance in IMC 0612 and determined that the finding was more than minor because it was associated with the program and process attribute of occupational radiation safety cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that inaccurate radiation monitoring affects the licensee's ability to control and limit radiation exposures. Using IMC 0609 Attachment C for the Occupational Radiation Safety SDP, the inspectors determined that the finding was of very low safety-significance because the finding did not involve: (1) ALARA planning and controls; (2) a radiological overexposure; (3) a substantial potential for an overexposure; and there was no compromised ability to assess dose. The primary cause of this finding was related to the cross-cutting aspect of human performance in the component of resources. Specifically, licensee did not provide complete and accurate procedures to the radiation safety staff. (H.2(c)) (Section 2RS4)

- Severity Level IV: The inspectors identified a NCV of 10 CFR 50.9(a), "Completeness and Accuracy of Information," that occurred when the licensee failed to report an Occupational Radiation Safety Performance Indicator (PI) occurrence to reflect an individual entering on April 22, 2011, a locked high radiation area in the drywell under vessel area without the appropriate radiological controls in place. The issue was entered into the licensee's CAP as CR 11-00473. Corrective actions included the licensee submitting corrected occupational radiation safety PI data to the NRC.

Violations of 10 CFR 50.9 that potentially impede or impact the regulatory process are dispositioned using traditional enforcement. The inspectors concluded that the licensee

had reasonable opportunity to foresee and correct the inaccurate information prior to the initial information being submitted to the NRC. This violation is characterized as a Severity Level (SL) IV violation because it is similar to Example 6.9.d.11 of the NRC Enforcement Policy, and is consistent with Section 2.2.1.c, in that the violation impacted the regulatory process. The violation was not repetitive or willful. The significance of the performance deficiency associated with the under vessel entry was previously reviewed by the inspectors and dispositioned in IR 05000440/2011013. As such, no ROP finding and no cross-cutting aspect was assigned in this report. (Section 4OA1)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

The plant began the inspection period at 100 percent power with only minor variations until an external leak was identified on the end bell of the 6A feedwater heater. On September 7, 2011, at 0958 hours, power was reduced to 89 percent to isolate the 6A feedwater heater. At 1520 hours the same day, the plant was returned to the maximum attainable power of 98 percent. On September 13, 2011, following the completion of repair activities, power was reduced to 64 percent to restore the 6A feedwater heater. At 2255 hours the same day, the plant was returned to 100 percent power. The plant operated at full power with only minor variations for the remainder of the quarter.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

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

- 'B' motor control center, switchgear and miscellaneous electrical equipment heating ventilation and air conditioning system on September 20, 2011;
- unit 2 startup transformer and electrical lineup with the unit 1 startup transformer isolated on September 26, 2011; and
- 'B' control room heating ventilation and air conditioning and emergency recirculation system on September 28, 2011.

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 systems, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Safety Analysis Report (USAR), Technical Specification (TS) requirements, outstanding work orders, 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 as defined in Inspection Procedure (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 Zones 0EW-1a,b (Emergency Service Water (ESW) Pumphouse);
- Fire Zone 0IB-2 (Intermediate Building 599' elevation);
- Fire Zones 1CC-3a,b,c,d (Control Complex 620' elevation);
- Fire Zones 1AB-1f, 3a, 3b (High-Pressure Core Spray Valve Room and Auxiliary Building 620'-6" elevation); and
- Fire Zones 1CC-5a, 2CC-5a (U1 & U2 Control Rooms).

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; fire detectors and sprinklers were unobstructed; 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 inspections constituted five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures – Underground Vaults (71111.06)

a. Inspection Scope

The inspectors selected underground bunkers/manholes subject to flooding that contained cables whose failure could disable risk-significant equipment. The inspectors determined that the cables were not submerged, that splices were intact, and that

appropriate cable support structures were in place. In those areas where dewatering devices were used, such as a sump pump, the device was operable and level alarm circuits were set appropriately to ensure that the cables would not be submerged. In those areas without dewatering devices, the inspectors verified that drainage of the area was available, or that the cables were qualified for submergence conditions. The inspectors also reviewed the licensee's corrective action documents with respect to past submerged cable issues identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the Division 3 Electrical Manhole #2 East Vault on July 20 and July 21, 2011.

This inspection constituted one sample for underground vaults as defined in IP 71111.06-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11Q)

a. Inspection Scope

On August 8, 2011, 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 problem, and that 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
- 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 licensed operator 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:

- main steam – American Society of Mechanical Engineers (ASME) test connection;
- turbine control valve #4; and
- ESW system 'A'.

The inspectors 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 three samples for quarterly maintenance effectiveness 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:

- high-pressure core spray instrument failure;
- heater bay building exhaust fan 2B shaft shear event;
- ESW pump 'A' packing failure;

- unexpected half scram caused by a relay failure during reactor protection system channel B/D maintenance;
- feedwater leak on #6A high-pressure heater; and
- unit one startup transformer failure.

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 six samples as defined in IP 71111.13-05.

b. Findings

Introduction: A self-revealed finding of very low safety significance (Green) was identified and an associated NCV of 10 CFR 50.65(a)(4) for the failure to accurately assess plant risk, considering the actual equipment conditions, during post-maintenance activities involving the 'A' ESW pump.

Description: On August 29, 2011, the 'A' ESW pump was declared inoperable after a routine packing adjustment caused the pump packing to smoke and the pump was secured. A problem solving team was formed and the packing was replaced utilizing a new packing gland follower because of indications that the installed follower at the time of failure was rubbing on the pump shaft. The packing was replaced and the new packing gland follower installed. Subsequent startup of the pump indicated a rub between the gland follower and the pump shaft. Reports that the maintenance was complete and that the system has been restored to a standby alignment led the shift manager to declare the pump as available and site risk was returned to GREEN at 0615 hours on August 30, 2011. The pump was not started and the rub detected until 45 minutes later at 0700 hours. YELLOW risk was again declared by the shift manager and 'A' ESW pump returned to an unavailable status.

Analysis: The inspectors determined that the licensee's failure to accurately assess the risk associated with maintenance activities on the 'A' ESW pump was a performance deficiency. The performance deficiency was determined to be more than minor because it was similar to Inspection Manual Chapter (IMC) 0612 Appendix E, Example 7.e, and resulted in actual online probabilistic risk assessment risk crossing the threshold into a higher licensee-established risk category. The performance deficiency is associated with the Mitigating Systems Cornerstone attribute of "Equipment Performance – Availability," and adversely impacted 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).

The inspectors determined that this 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." Using IMC 0609 Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," as referenced from Table 3b, the "SDP Phase 1 Screening Worksheet for the Mitigating Systems Cornerstone," the inspectors determined that the finding was of very low safety significance (Green) since the incremental core damage probability deficit (ICDPD) was $< 1E-6$.

Additionally, the inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, Decision-Making per IMC 0310 because the licensee did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed. Specifically, the licensee's administrative process to declare the 'A' ESW pump available following completion of the maintenance activities' paperwork, without actually demonstrating that the pump was capable of sustained operation, was not a valid assumption and the pump remained unavailable despite a declaration of GREEN risk for the site. (H.1(b))

Enforcement: The requirements of 10 CFR 50.65(a)(4) state, in part, that "the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities." Contrary to this requirement, for 45 minutes on August 30, 2011, the licensee's risk assessment did not accurately reflect the increase in online probabilistic risk assessment associated with 'A' ESW pump being unavailable. Since the licensee's risk mitigation actions remained in place during this period and an actual demand for the plant's safety systems did not occur, no actual safety consequences resulted. The licensee was required to modify the packing gland follower to make it fit the pump shaft prior to restoration of the pump on August 31, 2011. Because this violation was of very low safety significance and because the issue was entered into the licensee's CAP as CR 2011-01360, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000440/2010004-01, Failure to Correctly Assess Risk during 'A' ESW Pump Maintenance Activities.)

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- operational challenges when heater bay building exhaust fan 2B failed;
- failure to perform ASME code inspections on reactor vessel skirt;
- fuel pool cooling and cleanup declared non-functional; and
- turbine control valve fast closure scram circuitry.

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and Updated Safety Analysis Report (USAR) to the licensee's evaluations to determine whether the components or systems were operable.

Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors 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 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed the following modifications:

- Engineering Change Package Number 11-0422; Temporary Separation of Control Room Ammeter Circuit for Breaker EH1106 and EH1107; and
- Engineering Change Package Number 11-0491; Temporary Modification to Provide Supplemental Cooling to the Steam Tunnel Cooling System.

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 safety evaluation screening against the design basis, the USAR, and the TS, as applicable, to verify that the modifications did not affect the operability or availability of the affected systems. The inspectors, as applicable, observed ongoing and completed work activities to ensure that the modifications were installed as directed and consistent with the design control documents; the modifications operated as expected; post-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. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant 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 two temporary modification samples 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 activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- diesel-driven fire pump replacement testing on July 11-19, 2011;
- high-pressure core spray suppression pool high-level channel G master trip replacement functional test on July 19, 2011;
- average power range monitor 'G' 15V regulator card preventative maintenance replacement on August 24, 2011;
- main steam line 'D' high flow master trip unit replacement (preventative) calibration and functional check on September 1, 2011;
- reactor pressure vessel level 1 and 2 channel 'B' slave trip unit replacement (preventative) calibration and functional check on September 8, 2011; and
- feedwater heater '6A' leak repair testing on September 12, 2011.

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 post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted six post-maintenance 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:

- reactor pressure vessel level 3, level 8, and residual heat removal shutdown isolation channel 'C' calibration (routine);
- dynamic diagnostic testing of the reactor core isolation cooling first test valve (1E51-F022) to the condensate storage tank (routine);
- residual heat removal 'C' pump and valve operability (inservice testing);
- routine turbine bypass valve testing (routine);
- routine scram time testing (routine); and
- local leak rate testing of containment penetration valve 1M14F200 after actuator rebuild (containment isolation valve).

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, USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy;
- applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability;
- tests were performed in accordance with the test procedures and other applicable procedures;
- jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, 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, 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 four samples for routine surveillance testing; one sample for inservice testing; and one containment isolation valve test as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Evaluation (71114.02)

a. Inspection Scope

The inspectors reviewed documents and conducted discussions with emergency preparedness staff and management regarding the operation, maintenance, and periodic testing of the Alert and Notification System in the Perry plant's plume pathway Emergency Planning Zone. The inspectors reviewed monthly trend reports and the daily and monthly operability records from November 2009 through June 2011. Information gathered during document reviews and interviews was used to determine whether the Alert and Notification System equipment was maintained and tested in accordance with emergency plan commitments and procedures. Documents reviewed are listed in the Attachment to this report.

This alert and notification system inspection constituted one sample as defined in IP 71114.02-05.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)

a. Inspection Scope

The inspectors reviewed and discussed with plant emergency preparedness management and staff the emergency plan commitments and procedures that addressed the primary and alternate methods of initiating an Emergency Response Organization activation to augment the on shift staff as well as the provisions for maintaining the plant's Emergency Response Organization qualification and team lists. The inspectors reviewed reports and a sample of CAP records of unannounced off-hour augmentation tests and pager tests, which were conducted between December 2009 and August 2011, to determine the adequacy of the drill critiques and associated corrective actions. The inspectors also reviewed a sample of the emergency preparedness training records of approximately 26 Emergency Response Organization personnel, who were assigned to key and support positions, to determine the status of their training as it related to their assigned Emergency Response Organization positions. Documents reviewed are listed in the Attachment to this report.

This emergency response organization augmentation testing inspection constituted one sample as defined in IP 71114.03-05.

b. Findings

No findings were identified.

1EP5 Correction of Emergency Preparedness Weaknesses (71114.05)

a. Inspection Scope

The inspectors reviewed the fleet oversight staff's 2009 and 2010 audits of the Perry plant's emergency preparedness program to determine that the independent assessments met the requirements of 10 CFR 50.54(t). The inspectors also reviewed samples of CAP records associated with the 2010 biennial exercise, as well as various emergency preparedness drills conducted in 2009, 2010, and 2011, in order to determine whether the licensee fulfilled drill commitments and to evaluate the licensee's efforts to identify and resolve identified issues. The inspectors reviewed a sample of emergency preparedness items and corrective actions related to the station's emergency preparedness program and activities to determine whether corrective actions were completed in accordance with the site's CAP. Documents reviewed are listed in the Attachment to this report.

This correction of emergency preparedness weaknesses and deficiencies inspection constituted one sample as defined in IP 71114.05-05.

b. Findings

No findings were identified.

1EP6 Emergency Preparedness Drill Observation (71114.06)

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on September 28, 2011, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the site Technical Support Center, Emergency Operations Facility, and Simulator Control Room to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety and Public Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

The inspection activities supplement those documented in inspection report 05000440/2011003, and constitute one complete sample as defined in IP 71124.01-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed all licensee performance indicators for the occupational exposure cornerstone for follow-up. The inspectors reviewed the results of radiation protection program audits (e.g., licensee's quality assurance audits or other independent audits). The inspectors reviewed any reports of operational occurrences related to occupational radiation safety since the last inspection. The inspectors reviewed the results of the audit and operational report reviews to gain insights into overall licensee performance.

b. Findings

No findings were identified.

.2 Instructions to Workers (02.03)

a. Inspection Scope

The inspectors selected various containers holding non-exempt 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), "Exemptions To Labeling Requirements."

The inspectors reviewed the following radiation work permits (RWPs) used to access high radiation areas and evaluated the specified work control instructions or control barriers.

- RWP 110002, Operations;
- RWP 116037, RFO13 SRM-C Cable Reinsertion; and
- RWP 116042, RFO 13 Radiography.

The inspectors reviewed selected occurrences where a worker's electronic personal dosimeter (ED) noticeably malfunctioned or alarmed. The inspectors evaluated whether workers responded appropriately to the off-normal condition. The inspectors assessed whether the issue was included in the corrective action program and dose evaluations were conducted as appropriate.

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

Introduction: A finding of very low safety significance and associated Non-Cited Violation (NCV) of TS 5.7.1.b was self-revealed after workers' electronic dosimeters alarmed when they entered into high radiation areas (HRAs) in the plant. A performance deficiency was identified by the inspectors, when workers entered HRAs without being effectively made knowledgeable of the radiological conditions (actual and potential dose rates) of the areas entered. The inspectors identified two examples where the licensee failed to comply with radiological protective measures for work within HRAs and locked HRAs.

Description of Incident No. 1: On May 2, 2011, a pipefitter working on detensioning and removing the safety relief valve air blocks on the drywell 630 elevation, an area posted and controlled as a TS locked HRA, left his authorized work location and travel path. The worker obtained permission from his immediate supervisor to work in another location in the drywell that had easier access to an air supply header. The supervisor inappropriately authorized this change in work location without verifying the associated radiological impact of the move with the radiation protection staff. When the worker moved to the new work location his electronic dosimeter went into alarm. Maximum dose rate encountered by the worker was 361 mrem/hour and the worker's ED was set to alarm at 303 mrem/hour.

The inspectors determined that the worker entered into areas beyond the scope of the HRA brief and consequently was unaware of the elevated dose rates in his new work location. The issue was entered into the licensee's corrective action program as CR 11-93976.

Description of Incident No. 2: On May 9, 2011, an operator performing a work order clearance in the containment steam tunnel, a room posted and controlled as a HRA, crossed over to the west side of the room when the operator was authorized by radiation protection to access the east side of the room. The briefing between radiation protection and operations personnel was incomplete because the operator believed that he had authorization to access both the east and west sides of the room. The operator reviewed a general area survey map that contained dose rate information for the entire room. However, the radiological brief was limited to the radiological conditions on the east side of the room. Reviewing the radiological survey map was inadequate and lacked specificity for work performed in that it failed to prevent access to the area of elevated dose rates.

Maximum dose rate encountered by the worker was 712 mrem/hour and the worker's ED was set to alarm at 602 mrem/hour.

Similar to Incident No. 1, the inspectors determined that the worker entered into areas beyond the scope of the HRA brief and consequently was unaware of the elevated dose rates in his new work location. The issue was entered into the licensee's corrective action program as CR 11-94374.

As corrective actions for these incidents, the licensee developed means to improve its pre-job briefings for HRAs and was evaluating other approaches to ensure workers do not work beyond the scope of what was briefed.

Analysis: The inspectors determined that both of these issues of concern shared a common performance deficiency because workers did not comply with established radiological protective measures as specified for entry into and work within HRAs, as provided in the licensee's TSs. The inspectors determined that the cause of the performance deficiency was reasonably within the licensee's ability to foresee and correct and should have been prevented.

The finding was not subject to traditional enforcement since the incidents did not have a significant safety consequence, did not impact the NRC's ability to perform its regulatory function, and were not willful.

The inspectors reviewed the guidance in MC 0612 Appendix E, "Examples of Minor Issues," and identified Example 6(h) as similar to the performance issue. Although the individuals were authorized to work in specific locations within the rooms, the workers took unauthorized actions and entered into other HRAs unaware of the elevated radiological conditions. Therefore, in accordance with MC 0612 and Example 6(h) of Appendix E, the inspectors determined that the performance deficiency was more than minor. Additionally, the performance deficiency impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation in that worker entry into areas without knowledge of the radiological conditions placed them at increased risk for unnecessary radiation exposure.

In accordance with IMC 0609 Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined that the finding had very low safety significance because these HRA entries were not ALARA planning issues, there were no overexposures nor substantial potential for overexposures given the workers reaction to the ED alarms and the dose rate ranges, and the licensee's ability to assess dose was not compromised.

The inspectors determined that the primary cause of this finding was related to the cross-cutting aspect of problem identification and resolution in the component of the corrective action program in that the licensee failed to take the appropriate corrective actions to address safety issues in a timely manner, commensurate with their safety significance and complexity. Specifically, the licensee had previously identified issues with the effectiveness of radiological briefs for access to HRAs on four recent occasions CRs 10-77387, 10-81313, and 10-86072. (P.1(d)).

Enforcement: Technical Specification 5.7.1.b states, in part, that entry into high (and locked high) radiation areas be made after the dose rate levels in the area have been established and personnel are made aware of them. Contrary to the above, in two separate instances on May 2, 2011, and again on May 9, 2011, individuals traversed into HRAs without being aware of the radiological conditions of the areas entered. Since the failure to comply with the TSs was of very low safety significance and have been entered in the licensee's corrective action program as CR 11-93976 and CR 11-94374 this violation is being treated as a NCV consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000440/2011004-02, Failure to Verify Radiological Conditions Prior to Entering High Radiation Areas).

.3 Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors observed locations where the licensee monitors potentially contaminated material leaving the radiological control area and inspected the methods used for control, survey, and release from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures and whether the procedures were sufficient to control the spread of contamination and prevent unintended release of radioactive materials from the site. The inspectors assessed whether the radiation monitoring instrumentation had appropriate sensitivity for the type(s) of radiation present.

The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material. The inspectors evaluated whether 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 has 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 several sealed sources from the licensee's inventory records and assessed whether the sources were accounted for and verified to be intact.

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.

2RS2 Occupational As-Low-As-Is-Reasonably-Achievable Planning and Controls (71124.02)

The inspection activities supplement those documented in Inspection Reports 05000440/2010003 and 05000440/2011003; and constitute one complete sample as defined in IP 71124.02-05.

.1 Source Term Reduction and Control (02.04)

a. Inspection Scope

The inspectors used licensee records to determine the historical trends and current status of significant tracked plant source terms known to contribute to elevated facility aggregate exposure. The inspectors assessed whether the licensee had made allowances or developed contingency plans for expected changes in the source term as the result of changes in plant fuel performance issues or changes in plant primary chemistry.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment (71124.04)

The inspection activities supplement those documented in Inspection Reports 05000440/2010003 and 05000440/2010004, and constitute one complete sample as defined in IP 71124.04-05.

.1 Internal Dosimetry (02.03)

Routine Bioassay (In Vivo)

a. Inspection Scope

The inspectors reviewed procedures used to assess the dose from internally deposited nuclides using whole body counting equipment. The inspectors evaluated whether the procedures addressed methods for differentiating between internal and external contamination, the release of contaminated individuals, the route of intake and the assignment of dose.

The inspectors reviewed the whole body count process to determine if the frequency of measurements was consistent with the biological half-life of the nuclides available for intake.

b. Findings

No findings were identified.

.2 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 multibadging to evaluate whether the assessment was performed consistently with licensee procedures and dosimetric standards.

b. Findings

Introduction: The NRC identified a finding of very low safety significance (Green) and associated NCV of 10 CFR 20.1201 for the failure to accurately assess occupational dose specific to Effective Dose Equivalent (EDE) determinations.

Description: The licensee performed diving operations in the plant's spent fuel pool from February 15 to March 14, 2011. In order to support these diving activities, the licensee assessed the workers' occupational dose utilizing effective dose equivalent (EDE). Effective Dose Equivalent is a specialized dose assessment technique that requires licensees to evaluate total dose to the individual by the use of tissue and body organ weighting factors relative to the exposed portions of the human body. The use of the EDE dose assessment technique requires close radiological dose monitoring and the use of dosimetry methods that are pre-approved by the NRC. On November 20, 2008, the NRC sent a letter to First Entergy Nuclear Operating Company granting approval to the licensee for the use of weighting factors for external exposure. The EDE dose assessment method approved for use states, in part, "To ensure that the estimates of EDE are conservative, the licensee has committed to measuring the dose of each compartment (and/or combined compartment) by locating the dosimeter, calibrated to deep-dose equivalent (DDE), at the highest exposed portion of that compartment."

As a part of the baseline occupational radiation safety inspection program, the inspectors reviewed the licensee's implementation of EDE dose assessments for the spent fuel pool divers and identified errors. The inspectors noted that, when the licensee utilized EDE to assess the dose for multiple divers, the licensee failed to measure the highest exposed portion of combined bodily compartments. Specifically, the thorax and abdomen were being treated as combined compartments with the dosimeter located on the thorax while the highest exposed portion of that combined compartment was the abdomen.

This issue was entered into the licensee's corrective actions program under CR 11-02336. Corrective actions include a review of applicable guidance and revisions to applicable procedures.

Analysis: The inspectors determined that this issue of concern was a performance deficiency because the licensee did not perform EDE dose assessment in accordance with an approved NRC dosimetry method. The inspectors determined that the cause of the performance deficiency was reasonably within the licensee's ability to foresee and correct and should have been prevented.

The finding was not subject to traditional enforcement since the incidents did not have a significant safety consequence, did not impact the NRC's ability to perform its regulatory function, and were not willful.

The inspectors reviewed the guidance in IMC 0612 Appendix E, "Examples of Minor Issues," and did not find any similar examples. The performance deficiency was determined to be of more than minor safety significance in accordance with IMC 0612 Appendix B, "Issue Screening," because it was associated with the program and process attribute of Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that inaccurate radiation monitoring affects the licensee's ability to control and limit radiation exposures.

In accordance with IMC 0609 Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined that the finding had very low safety significance (Green) because the finding did not involve: (1) As-Low-As-Is-Reasonably-Achievable (ALARA) planning and controls, (2) a radiological overexposure, (3) a

substantial potential for an overexposure, and there was no compromised ability to assess dose.

The inspectors identified that the primary cause of this finding was related to the cross-cutting aspect of human performance in the component of resources. Specifically, licensee did not provide complete and accurate procedures to the staff. (H.2(c))

Enforcement: Title 10 CFR 20.1201(c) states in part that “when the external exposure is determined by measurement with an external personal monitoring device, the DDE must be used in place of the EDE, unless the EDE is determined by a dosimetry method approved by the NRC.” Contrary to the above, during diving activities at the station in February and March, 2011, the licensee failed to use an approved NCR method for determining EDE. Since the violation of 10 CFR 20.1201 was of very low safety significance and has been entered in the licensee’s corrective action program as CR 11-02336 this violation is being treated as a NCV consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000440/2011004-03, Failure to Accurately Assess Occupational Dose).

Shallow Dose Equivalent

a. Inspection Scope

The inspectors reviewed shallow dose equivalent dose assessments for adequacy. The inspectors evaluated the licensee’s method (e.g., VARSKIN or similar code) for calculating shallow dose equivalent from distributed skin contamination or discrete radioactive particles.

b. Findings

No findings were identified.

Neutron Dose Assessment

a. Inspection Scope

The inspectors evaluated the licensee’s neutron dosimetry program, including dosimeter types and/or survey instrumentation.

The inspectors reviewed neutron exposure situations (e.g., independent spent fuel storage installation operations or at-power containment entries) and assessed whether (a) dosimetry and/or instrumentation was appropriate for the expected neutron spectra, (b) there was sufficient sensitivity for low dose and/or dose rate measurement, and (c) neutron dosimetry was properly calibrated. The inspectors also assessed whether interference by gamma radiation had been accounted for in the calibration and whether time and motion evaluations were representative of actual neutron exposure events, as applicable.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

This inspection constituted one complete sample as defined in IP 71124.06-05.

.1 Inspection Planning and Program Reviews (02.01)

Event Report and Effluent Report Reviews

a. Inspection Scope

The inspectors reviewed the radiological effluent release reports issued since the last inspection to determine if the reports were submitted as required by the Offsite Dose Calculation Manual (ODCM)/TSs. The inspectors reviewed anomalous results, unexpected trends, or abnormal releases identified by the licensee for further inspection to determine if they were evaluated, were entered in the CAP, and were adequately resolved.

The inspectors identified radioactive effluent monitor operability issues reported by the licensee as provided in effluent release reports, to review these issues during the onsite inspection, as warranted, given their relative significance and determine if the issues were entered into the CAP and adequately resolved.

b. Findings

No findings were identified.

.2 Offsite Dose Calculation Manual and Updated Safety Analysis Report Review

a. Inspection Scope

The inspectors reviewed USAR descriptions of the radioactive effluent monitoring systems, treatment systems, and effluent flow paths so they can be evaluated during inspection walkdowns.

The inspectors reviewed changes to the ODCM made by the licensee since the last inspection against the guidance in NUREG-1302 and 0133, and Regulatory Guides 1.109, 1.21 and 4.1. When differences were identified, the inspectors reviewed the technical basis or evaluations of the change during the onsite inspection to determine whether they were technically justified and maintain effluent releases ALARA.

The inspectors reviewed licensee documentation to determine if the licensee has identified any non-radioactive systems that have become contaminated as disclosed either through an event report or the ODCM since the last inspection. This review provided an intelligent sample list for the onsite inspection of any 10 CFR 50.59 evaluations and allowed a determination if any newly contaminated systems have an unmonitored effluent discharge path to the environment, whether any required ODCM revisions were made to incorporate these new pathways and whether the associated effluents were reported in accordance with Regulatory Guide 1.21.

b. Findings

No findings were identified.

.3 Groundwater Protection Initiative Program

a. Inspection Scope

The inspectors reviewed reported groundwater monitoring results and changes to the licensee's written program for identifying and controlling contaminated spills/leaks to groundwater.

b. Findings

No findings were identified.

.4 Procedures, Special Reports, and Other Documents

a. Inspection Scope

The inspectors reviewed Licensee Event Reports, event reports and/or special reports related to the effluent program issued since the previous inspection to identify any additional focus areas for the inspection based on the scope/breadth of problems described in these reports.

The inspectors reviewed effluent program implementing procedures, particularly those associated with effluent sampling, effluent monitor set-point determinations, and dose calculations.

The inspectors reviewed copies of licensee and third party (independent) evaluation reports of the effluent monitoring program since the last inspection to gather insights into the licensee's program and aid in selecting areas for inspection review (smart sampling).

b. Findings

No findings were identified.

.5 Walkdowns and Observations (02.02)

a. Inspection Scope

The inspectors walked down selected components of the gaseous and liquid discharge systems to verify that equipment configuration and flow paths align with the documents reviewed in Subtitle 02.01 above and to assess equipment material condition. Special attention was made to identify potential unmonitored release points (such as open roof vents in boiling water reactor turbine decks, temporary structures butted against turbine, auxiliary or containment buildings), building alterations which could impact airborne, or liquid, effluent controls, and ventilation system leakage that communicates directly with the environment.

For equipment or areas associated with the systems selected for review that were not readily accessible due to radiological conditions, the inspectors reviewed the licensee's material condition surveillance records, as applicable.

The inspectors walked down filtered ventilation systems to verify there are no conditions, such as degraded high-efficiency particulate air/charcoal banks, improper alignment, or

system installation issues that would impact the performance, or the effluent monitoring capability, of the effluent system.

As available, the inspectors observed selected portions of the routine processing and discharge of radioactive gaseous effluent (including sample collection and analysis) to verify that appropriate treatment equipment was used and the processing activities align with discharge permits.

The inspectors determined if the licensee has made significant changes to their effluent release points, e.g., changes subject to a 10 CFR 50.59 review or require NRC approval of alternate discharge points.

As available, the inspectors observed selected portions of the routine processing and discharge liquid waste (including sample collection and analysis) to verify that appropriate effluent treatment equipment is being used and that radioactive liquid waste is being processed and discharged in accordance with procedure requirements and aligns with discharge permits.

b. Findings

No findings were identified.

6. Sampling and Analyses (02.03)

a. Inspection Scope

The inspectors selected effluent sampling activities, consistent with smart sampling, and assessed whether adequate controls have been implemented to ensure representative samples were obtained (e.g., provisions for sample line flushing, vessel recirculation, composite samplers, etc.)

The inspectors selected effluent discharges made with inoperable (declared out-of-service) effluent radiation monitors to verify that controls are in place to ensure compensatory sampling is performed consistent with the radiological effluent TSs/ODCM and that those controls are adequate to prevent the release of unmonitored liquid and gaseous effluents.

The inspectors determined whether the facility is routinely relying on the use of compensatory sampling in lieu of adequate system maintenance, based on the frequency of compensatory sampling since the last inspection.

The inspectors reviewed the results of the inter-laboratory comparison program to verify the quality of the radioactive effluent sample analyses and assessed whether the inter-laboratory comparison program includes had-to-detect isotopes as appropriate.

b. Findings

No findings were identified.

.7 Instrumentation and Equipment (02.04)

Effluent Flow Measuring Instruments

a. Inspection Scope

The inspectors reviewed the methodology the licensee uses to determine the effluent stack and vent flow rates to verify that the flow rates are consistent with radiological effluent TS/ODCM or USAR values, and that differences between assumed and actual stack and vent flow rates do not affect the results of the projected public doses.

b. Findings

No findings were identified.

.8 Air Cleaning Systems

a. Inspection Scope

The inspectors assessed whether surveillance test results since the previous inspection for TS required ventilation effluent discharge systems (high-efficiency particulate air and charcoal filtration), such as the Standby Gas Treatment System and the Containment/Auxiliary Building Ventilation System, meet TS acceptance criteria.

b. Findings

No findings were identified.

.9 Dose Calculations (02.05)

a. Inspection Scope

The inspectors reviewed all significant changes in reported dose values compared to the previous radiological effluent release report (e.g., a factor of 5, or increases that approach Appendix I Criteria) to evaluate the factors which may have resulted in the change.

The inspectors reviewed radioactive liquid and gaseous waste discharge permits to verify that the projected doses to members of the public were accurate and based on representative samples of the discharge path.

Inspectors evaluated the methods used to determine the isotopes that are included in the source term to ensure all applicable radionuclides are included, within detectability standards. The review included the current Part 61 analyses to ensure hard-to-detect radionuclides are included in the source term.

The inspectors reviewed changes in the licensee's offsite dose calculations since the last inspection to verify the changes are consistent with the ODCM and Regulatory Guide 1.109. Inspectors reviewed meteorological dispersion and deposition factors used in the ODCM and effluent dose calculations to ensure appropriate factors are being used for public dose calculations.

The inspectors reviewed the latest Land Use Census to verify that changes (e.g., significant increases or decreases to population in the plant environs, changes in critical exposure pathways, the location of nearest member of the public, or critical receptor, etc.) have been factored into the dose calculations.

For the releases reviewed above, the inspectors evaluated whether the calculated doses (monthly, quarterly, and annual dose) are within the 10 CFR Part 50, Appendix I, and TS dose criteria.

The inspectors reviewed, as available, records of any abnormal gaseous or liquid tank discharges (e.g., discharges resulting from misaligned valves, valve leak-by, etc.) to ensure the abnormal discharge was monitored by the discharge point effluent monitor. Discharges made with inoperable effluent radiation monitors, or unmonitored leakages were reviewed to ensure that an evaluation was made of the discharge to satisfy 10 CFR 20.1501 so as to account for the source term and projected doses to the public.

b. Findings

No findings were identified.

.10 Groundwater Protection Initiative Implementation (02.06)

a. Inspection Scope

The inspectors reviewed monitoring results of the Groundwater Protection Initiative to determine if the licensee has implemented its program as intended, and to identify any anomalous results. For anomalous results or missed samples, the inspectors assessed whether the licensee has identified and addressed deficiencies through its corrective action program.

The inspectors reviewed identified leakage or spill events and entries made into 10 CFR 50.75 (g) records. The inspectors reviewed evaluations of leaks or spills, and reviewed any remediation actions taken for effectiveness. The inspectors reviewed onsite contamination events involving contamination of ground water and assessed whether the source of the leak or spill was identified and mitigated.

For unmonitored spills, leaks, or unexpected liquid or gaseous discharges, the inspectors assessed whether an evaluation was performed to determine the type and amount of radioactive material that was discharged.

The inspectors assessed whether sufficient radiological surveys were performed to evaluate the extent of the contamination and the radiological source term and assessing whether a survey/evaluation has been performed to include consideration of hard-to-detect radionuclides.

The inspectors determined whether the licensee completed offsite notifications, as provided in its Groundwater Protection Initiative implementing procedures.

The inspectors reviewed the evaluation of discharges from onsite surface water bodies that contain or potentially contain radioactivity, and the potential for ground water leakage from these onsite surface water bodies. The inspectors assessed whether the

licensee is properly accounting for discharges from these surface water bodies as part of their effluent release reports.

The inspectors assessed whether on-site ground water sample results and a description of any significant on-site leaks/spills into ground water for each calendar year are documented in the Annual Radiological Environmental Operating Report for the radiological environmental monitoring program or the Annual Radiological Effluent Release Report for the radiological effluent TSs.

For significant, new effluent discharge points (such as significant or continuing leakage to ground water that continues to impact the environment if not remediated), the inspectors evaluated whether the ODCM was updated to include the new release point.

b. Findings

No findings were identified.

.11 Problem Identification and Resolution (02.07)

a. Inspection Scope

Inspectors assessed whether problems associated with the effluent monitoring and control program are being identified by the licensee at an appropriate threshold and are properly addressed for resolution in the licensee CAP. In addition, they evaluated the appropriateness of the corrective actions for a selected sample of problems documented by the licensee involving radiation monitoring and exposure controls.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07)

This inspection constituted one complete sample as defined in IP 71124.07-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the annual radiological environmental operating reports and the results of any licensee assessments since the last inspection to verify that the radiological environmental monitoring program was implemented in accordance with the TS/ODCM. This review included report changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, inter-laboratory comparison program, and analysis of data.

The inspectors reviewed the ODCM to identify locations of environmental monitoring stations.

The inspectors reviewed the USAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

The inspectors reviewed quality assurance audit results of the program to assist in choosing inspection “smart samples” and audits and technical evaluations performed on the vendor laboratory program.

The inspectors reviewed the annual effluent release report and the 10 CFR Part 61, “Licensing Requirements for Land Disposal of Radioactive Waste,” report, to determine if the licensee is sampling, as appropriate, for the predominant and dose-causing radionuclides likely to be released in effluents.

b. Findings

No findings were identified.

.2 Site Inspection (02.02)

a. Inspection Scope

The inspectors walked down select air sampling stations and thermoluminescent dosimeter monitoring stations to determine whether they are located as described in the ODCM and to determine the equipment material condition. Consistent with smart sampling, the air sampling stations were selected based on the locations with the highest X/Q, D/Q wind sectors, and thermoluminescent dosimeters were selected based on the most risk-significant locations (e.g., those that have the highest potential for public dose impact).

For the air samplers and thermoluminescent dosimeters selected, the inspectors reviewed the calibration and maintenance records to verify that they demonstrate adequate operability of these components. Additionally, the review included the calibration and maintenance records of select composite water samplers.

The inspectors performed an assessment of whether the licensee has initiated sampling of other appropriate media upon loss of a required sampling station.

The inspectors observed the collection and preparation of environmental samples from different environmental media (e.g., ground and surface water, milk, vegetation, sediment, and soil) as available to verify that environmental sampling is representative of the release pathways as specified in the ODCM and that sampling techniques are in accordance with procedures.

Based on direct observation and review of records, the inspectors assessed whether the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the Updated Safety Analysis Report, NRC Regulatory Guide 1.23, “Meteorological Monitoring Programs for Nuclear Power Plants,” and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments in the control room and, if applicable, at the tower were operable.

The inspectors evaluated whether missed and/or anomalous environmental samples were identified and reported in the annual environmental monitoring report. The inspectors selected events that involved a missed sample, inoperable sampler, lost thermoluminescent dosimeter, or anomalous measurement to verify that the licensee has identified the cause and has implemented corrective actions. The inspectors

reviewed the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection) and reviewed the associated radioactive effluent release data that was the source of the released material.

Inspectors selected structures, systems, or components that involve or could reasonably involve licensed material for which there is a credible mechanism for licensed material to reach ground water, and assessed whether the licensee has implemented a sampling and monitoring program sufficient to detect leakage of these structures, systems, or components to ground water.

The inspectors evaluated whether records, as required by 10 CFR 50.75(g), of leaks, spills, and remediation since the previous inspection are retained in a retrievable manner.

The inspectors reviewed any significant changes made by the licensee to the ODCM as the result of changes to the land census, long-term meteorological conditions (3-year average), or modifications to the sampler stations since the last inspection. They reviewed technical justifications for any changed sampling locations to verify that the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors assessed whether the appropriate detection sensitivities with respect to TS/ODCM are used for counting samples (i.e., the samples meet the TS/ODCM required lower limits of detection). The licensee uses a vendor laboratory to analyze the radiological environmental monitoring program samples so the inspectors reviewed the results of the vendor's quality control program, including the interlaboratory comparison, to assess the adequacy of the vendor's program.

The inspectors reviewed the results of the licensee's interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by the licensee. The inspectors assessed whether the interlaboratory comparison test included the media/nuclide mix appropriate for the facility. If applicable, the inspectors reviewed the licensee's determination of any bias to the data and the overall effect on the radiological environmental monitoring program.

b. Findings

No findings were identified.

.3 Identification and Resolution of Problems (02.03)

a. Inspection Scope

The inspectors assessed whether problems associated with the radiological environmental monitoring program are being identified by the licensee at an appropriate threshold and are properly addressed for resolution in the licensee's corrective action program. Additionally, they assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involved the radiological environmental monitoring program.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

This inspection constituted one complete sample as defined in IP 71124.08-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the USAR, the process control program, and the recent radiological effluent release report for information on the types, amounts, and processing of radioactive waste disposed.

The inspectors reviewed the scope of any quality assurance audits in this area since the last inspection to gain insights into the licensee's performance and inform the "smart sampling" inspection planning.

b. Findings

No findings were identified.

.2 Radioactive Material Storage (02.02)

a. Inspection Scope

The inspectors selected areas where containers of radioactive waste are stored, and evaluated whether the containers were labeled in accordance with 10 CFR 20.1904, "Labeling Containers," or controlled in accordance with 10 CFR 20.1905, "Exemptions to Labeling Requirements," as appropriate.

The inspectors assessed whether the radioactive material storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20, "Standards for Protection against Radiation." For materials stored or used in the controlled or unrestricted areas, the inspectors evaluated whether they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801, "Security of Stored Material," and 10 CFR 20.1802, "Control of Material Not in Storage," as appropriate.

The inspectors evaluated whether the licensee established a process for monitoring the impact of long term storage (e.g., buildup of any gases produced by waste decomposition, chemical reactions, container deformation, loss of container integrity, or re-release of free-flowing water) that was sufficient to identify potential unmonitored, unplanned releases or non-conformance with waste disposal requirements.

The inspectors selected containers of stored radioactive material, and assessed for signs of swelling, leakage, and deformation.

b. Findings

No findings were identified.

.3 Radioactive Waste System Walkdown (02.03)

a. Inspection Scope

The inspectors walked down accessible portions of select radioactive waste processing systems to assess whether the current system configuration and operation agreed with the descriptions in the USAR, ODCM, and process control program.

The inspectors reviewed administrative and/or physical controls (i.e., drainage and isolation of the system from other systems) to assess whether the equipment which is not in service or abandoned in place would not contribute to an unmonitored release path and/or affect operating systems or be a source of unnecessary personnel exposure. The inspectors assessed whether the licensee reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments."

The inspectors reviewed the adequacy of changes made to the radioactive waste processing systems since the last inspection. The inspectors evaluated whether changes from what is described in the USAR were reviewed and documented in accordance with 10 CFR 50.59 as appropriate and to assess the impact on radiation doses to members of the public.

The inspectors selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers and assessed whether the waste stream mixing, sampling procedures, and methodology for waste concentration averaging were consistent with the process control program, and provided representative samples of the waste product for the purposes of waste classification as described in 10 CFR 61.55, "Waste Classification."

For those systems that provide tank recirculation, the inspectors evaluated whether the tank recirculation procedures provided sufficient mixing.

The inspectors assessed whether the licensee's process control program correctly described the current methods and procedures for dewatering and waste stabilization (e.g., removal of freestanding liquid).

b. Findings

No findings were identified.

.4 Waste Characterization and Classification (02.04)

a. Inspection Scope

The inspectors selected the following radioactive waste streams for review:

- bead resin; and
- powdered resin.

For the waste streams listed above, the inspectors assessed whether the licensee's radiochemical sample analysis results (i.e., "10 CFR Part 61" analysis) were sufficient to support radioactive waste characterization as required by 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." The inspectors evaluated whether the licensee's use of scaling factors and calculations to account for difficult-to-measure radionuclides was technically sound and based on current 10 CFR Part 61 analysis for the selected radioactive waste streams.

The inspectors evaluated whether changes to plant operational parameters were taken into account to: (1) maintain the validity of the waste stream composition data between the annual or biennial sample analysis update; and (2) assure that waste shipments continued to meet the requirements of 10 CFR Part 61 for the waste streams selected above.

The inspectors evaluated whether the licensee had established and maintained an adequate quality assurance program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56, "Waste Characteristics."

b. Findings

No findings were identified.

.5 Shipment Preparation (02.05)

a. Inspection Scope

The inspectors observed shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and licensee verification of shipment readiness. The inspectors assessed whether the requirements of applicable transport cask certificate of compliance had been met. The inspectors evaluated whether the receiving licensee was authorized to receive the shipment packages. The inspectors evaluated whether the licensee's procedures for cask loading and closure procedures were consistent with the vendor's current approved procedures.

The inspectors observed radiation workers during the conduct of radioactive waste processing and radioactive material shipment preparation and receipt activities. The inspectors assessed whether the shippers were knowledgeable of the shipping regulations and whether shipping personnel demonstrated adequate skills to accomplish the package preparation requirements for public transport with respect to:

- NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," dated August 10, 1979; and
- Title 49 CFR Part 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, Training Requirements, and Security Plans," Subpart H, "Training."

The inspectors reviewed the technical instructions presented to workers during routine training. The inspectors assessed whether the licensee's training program provided training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

b. Findings

No findings were identified.

.6 Shipping Records (02.06)

a. Inspection Scope

The inspectors evaluated whether the shipping documents indicated the proper shipper name; emergency response information and a 24-hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and UN number for the following radioactive shipments:

- Radioactive Waste Shipment Number 11-1017,
- Radioactive Material Shipment Number 11-3046; and
- Radioactive Material Shipment Number 11-3054.

Additionally, the inspectors assessed whether the shipment placarding was consistent with the information in the shipping documentation.

b. Findings

No findings were identified.

.7 Identification and Resolution of Problems (02.07)

a. Inspection Scope

The inspectors assessed whether problems associated with radioactive waste processing, handling, storage, and transportation, were being identified by the licensee at an appropriate threshold, were properly characterized, and were properly addressed for resolution in the licensee corrective action program. Additionally, the inspectors evaluated whether the corrective actions were appropriate for a selected sample of problems documented by the licensee that involve radioactive waste processing, handling, storage, and transportation.

The inspectors reviewed results of selected audits performed since the last inspection of this program and evaluated the adequacy of the licensee's corrective actions for issues identified during those audits.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstones: Mitigating Systems, Barrier Integrity, Emergency Preparedness, and Occupational Radiation Safety

4OA1 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 (PI) for the period from the third quarter 2010 through the second quarter 2011. 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, was 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 2010 through the second quarter 2011 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 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 PI for the period from the third quarter 2010 through the second quarter 2011. 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, was 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 2010 through the second quarter 2011 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 PI sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity PI for Perry Nuclear Power Plant for the period from the fourth quarter 2010 through the second quarter 2011. The inspectors used PI definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009 to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's reactor coolant system chemistry samples, TS requirements, issue reports, event reports and NRC Integrated Inspection Reports for the period of fourth quarter 2010 through the second quarter 2011 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one reactor coolant system specific activity sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.4 Drill/Exercise Performance

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill/Exercise Performance PI for the period from the third quarter 2010 through second quarter 2011. 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, were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the Drill/Exercise Performance PI in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI; assessments of PI opportunities during pre-designated control room simulator training sessions, performance during the 2010 biennial exercise, and performance during other drills. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one drill/exercise performance PI sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.5 Emergency Response Organization Drill Participation

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation PI for the period from the third quarter 2010 through second quarter 2011. 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, were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI; performance during the 2010 biennial exercise and other drills; and revisions of the roster of personnel assigned to key emergency response organization positions. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one emergency response organization drill participation PI sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.6 Alert and Notification System Reliability

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System PI for the period from the third quarter 2010 through second quarter 2011. 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, were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI and results of periodic alert and notification system operability tests. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one alert and notification system PI sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.7 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the occupational radiological PI occurrences for the period from the first quarter 2011 through August 2011. The inspectors used PI definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, and NRC approved NEI FAQ number 203 regarding the occupational radiation safety performance indicator to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's PI data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic personal dosimetry dose rate and accumulated dose alarms and dose reports and the dose assignments for any intakes that occurred during the time period were reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

This inspection supplements those documented in Inspection Report 05000440/2011002.

b. Findings

Introduction: The inspectors identified two findings:

- The inspectors identified a Severity Level (SL) IV NCV of 10 CFR 50.9(a), "Completeness and Accuracy of Information," when the licensee failed to report an Occupational Radiation Safety PI occurrence to reflect an individual entering the drywell under vessel area without the appropriate radiological controls in place on April 22, 2011.
- The inspectors identified an additional example of a violation of TS 5.7.1, related to a WHITE finding documented in NRC Inspection Report No. 0500440/2011013 and 0500440/2011014, for the failure to perform an adequate radiological evaluation prior to an under vessel entry on April 22, 2011. The inspectors determined that the issue was adequately accounted for through the finding issued in listed reports and that a separate finding was not warranted.

Description: On April 22, 2011, a worker entered the drywell under vessel area and the drywell sub-pile room to re-insert the 'C' source range monitor (SRM) into the reactor vessel. The drywell was appropriately posted and controlled as a locked high radiation area. However, station TS 5.7.1, "High Radiation Area," required, in part, that entries into these areas be made after the dose rates in the area have been established. In this instance, the area was not sufficiently characterized for the radiological hazards present prior to permitting personnel entry.

Specifically, the under vessel area had a significant dose rate gradient due to the manually withdrawn SRM). The dose rates at the SRM drive tube were known to be in

excess of 1000 rem/hr. Survey results showed 20 rem/hr on the right side at the top of the sub-pile room access ladder. Dose rates were 80 rem/hr a few inches past the right side at the top of the ladder and increased significantly as the radiation survey instrument was placed closer to the SRM drive tube, until such time as the radiation survey instrument went off-scale high. Consequently, the radiological conditions a few feet past the sub-pile room access ladder were unknown. The licensee attempted to assess the radiological conditions in this area with an instrument that was not capable of evaluating the radiation field that could potentially be entered by the worker (i.e. the entire distance from the ladder to the SRM drive tube was a nominal 3 feet.).

Additionally, the radiological assessment of the worker's expected travel path was incomplete. Radiological surveys were limited to the under vessel work platform. The licensee authorized the entry into the sub-pile room on the expectation that the radiological conditions in the sub-pile room and on the access ladder were analogous to the ED records of persons leaving the area the day before. The licensee assumed that the source of radiation was unchanged from the previous day and that the SRM detector remained in the same position within the drive tube. The actual radiological conditions that the worker was to enter were not verified prior to entry, which did not meet the requirement contained in TS 5.7.1.

The inspectors determined that radiological controls put in place by the licensee were not sufficient to ensure effective radiological control of the entry, given the significant dose rate gradient present. The worker was placed in multi-pack dosimetry that had remote readout capability in the central monitoring station (CMS). The remote monitoring dosimetry was tested prior to entry and shown to have a nominal 25 second delay time from the point that an ED went into an alarm condition until the alarm was received in the CMS. The CMS also had visual monitoring capability of the work area by use of cameras. The radiation protection technician (RPT) in the CMS was in headset radio communication with the worker and radiation protection supervision was providing oversight in the CMS.

In the pre-job brief, the licensee instructed the worker to not go beyond the sub-pile room access ladder. The RPT in the CMS declared a stop work condition given the 80 rem/hr dose rates near the top of the ladder. Radiation protection supervision intervened and stated that the stop work criteria was "at the top of the ladder" and discussed the situation with the worker to determine if the worker could maintain his body position within the 20 rem/hr stop work criteria. The worker stated that he could maintain the appropriate body position and work was authorized to continue.

As the worker was accessing the ladder to the sub-pile, the ED went into alarm at 79.900 rem/hr. The ED did not show alarm status in the CMS because of the 25 second delay time between the ED and the CMS. Although the time delay was known to the licensee, no compensatory actions were implemented when establishing radiological controls for the entry to account for the time delay. The information that the head height dose rates were above the stop work criteria was known to the licensee prior to authorizing entry into the area, but not appropriately acted upon at the time.

The inspectors discussed this under-vessel entry relative to the NEI occupational radiation safety performance indicator reporting criteria with the licensee prior to the initial licensee submittal of the performance indicator data. Specifically, the inspectors referred the licensee to NEI performance indicator "frequently asked question" (FAQ)

No. 203, such that, the licensee could gain insights into concurrent and non-concurrent PI occurrences. It was incumbent upon the licensee to appropriately differentiate between the radiological controls present for this under-vessel entry verses the radiological controls in place for the under-vessel entry that occurred on April 21, 2011, and resulted in the inappropriate withdrawal of the SRM as documented in NRC Inspection Report 05000440/2011013.

Analysis: The failure to perform an adequate evaluation of radiological conditions prior to the April 22, 2011, under vessel entry was a violation of plant TS 5.7.1 “High Radiation Area” that requires, in part, that entries into these areas be made after the dose rates in the area have been established. In this instance, the area was not sufficiently characterized for the radiological hazards present prior to permitting personnel entry, similar to the April 21, 2011 under vessel entry. The significance of this performance deficiency has been previously reviewed by the inspectors and documented in NRC Inspection Reports Nos. 0500440/20011013 and 0500440/2011014. Consequently, the performance deficiency associated with the April 22, 2011, under vessel entry was determined to be adequately accounted for through that finding, and a separate finding is not being issued.

The inspectors reviewed the performance deficiency associated with the licensee’s failure to submit complete and accurate performance indicator data for occupational radiation safety for the second quarter 2011. Violations of 10 CFR 50.9 are considered to potentially impede or impact the regulatory process and are evaluated using the traditional enforcement process. The inspectors concluded that licensee had reasonable opportunity to foresee and correct the inaccurate information prior to the information being submitted to the NRC. This violation is characterized as a Severity Level IV violation because it is similar to Example 6.9.d.11 of the NRC Enforcement Policy which states, “A 10 CFR Part 50 licensee submits inaccurate or incomplete PI data to the NRC that would have caused the PI to change from green to white” and is consistent with Section 2.2.1.c, in that, the violation impacted the regulatory process. Specifically, the failure of the licensee to accurately report the occupational radiation safety PI data for the second quarter 2011 adversely impacted the regulatory process of accurate assessment of the licensee’s position within the ROP Action Matrix. Corrective actions included the licensee submitting corrected occupational radiation safety PI data to the NRC.

Enforcement: Title 10 CFR 50.9(a) requires, in part, that information provided to the NRC by a licensee be complete and accurate in all material respects. Contrary to the above, on July 25, 2011, the licensee failed to provide complete and accurate information regarding the number of occupational radiation safety performance indicator occurrences during the second quarter of 2011. This violation is characterized as a SL IV NCV consistent with Sections 2.2.1.c and 6.9 of the NRC Enforcement Policy. Because this finding was of very low safety significance, was not repetitive or willful, and was entered into the licensee’s CAP (CR 11-00473), it is being treated as an NCV in accordance with Section 2.3.2 of the NRC enforcement policy. (05000440/2011004-04, Failure to Provide Complete and Accurate Information)

Technical Specification 5.7.1 requires, in part, that entry into high and locked high radiation areas be made after the dose rate levels in the area have been established and personnel are made aware of the levels. Contrary to the above, on April 22, 2011, the licensee permitted entry into a high radiation area without establishing the dose rate

levels in the area and without personnel being made aware of the dose rates. Specifically, the licensee did not perform a complete radiological characterization associated with an entry into the under vessel area. Consequently, the licensee did not inform the worker of the potential dose rate levels associated with the entry into the high radiation area. This violation constitutes an additional example of violation 0500440/2011013-02 and is not being cited individually. No additional response to violation 0500440/2011013-02 is required. Further corrective actions for this additional example are expected to be taken in conjunction with corrective actions for the previously cited violation.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As part of the various baseline IPs discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: 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 condition report 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 Semiannual 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 of January 1, 2011, through June 30, 2011, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP such as 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.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report 05000440/2011-001-00: Fire Protection Design Vulnerability Results in an Unanalyzed Condition

a. Inspection Scope

On July 5, 2011, at approximately 1815 hours, during a review for applicability of a 10 CFR 21 notification, it was determined that the original plant design contained a wiring deficiency that constituted a fire protection program concern. The wiring deficiency could adversely affect the ability to achieve and maintain safe shutdown of the plant in the unlikely event of a control room fire. Two components were affected: the control room ammeter for 'A' ESW pump and the control room ammeter for 'A' Control Complex Chill Water chiller. The licensee documented the deficiency in CR 11-97305 and conducted a full apparent cause evaluation to determine the appropriate corrective actions, which included implementing two temporary modifications to remove the deficiency by lifting leads and installing jumpers. Planned corrective actions include designing and implementing a method to isolate the ammeters if a control room fire occurs and training of engineering personnel related to indication circuits and safe shutdown components. The deficiency was determined to be of low safety significance

by the licensee. The Licensee Event Report (LER) and apparent cause evaluation were reviewed by the inspectors and no additional findings or violations of NRC requirements were identified. Documents reviewed are listed in the Attachment. This LER is closed.

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

b. Findings

No findings were identified.

.2 Unit One Startup Transformer Failure

a. Inspection Scope

The inspectors observed and reviewed the licensee's response to the failure of the unit one startup transformer that occurred on September 29, 2011. The licensee entered the Required Actions of TS 3.8.1 and planned a shutdown for October 2, 2011. The licensee entered the event into their CAP for evaluation as CR 2011-02542 and began an investigation on the transformer failure. Documents reviewed in this inspection are listed in the Attachment.

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

b. Findings

No findings were identified.

4OA5 Other Activities

.1 (Closed) Follow-up Inspection for Notice of Violation 05000440/2010008-01; Deliberate Failure to Follow Portal Monitor Use Procedure.

a. Inspection Scope

On July 30, 2010, the NRC issued a Notice of Violation (Inspection Report 05000440/2010008) to the licensee related to a radiation protection technician's deliberate failure to follow portal monitor use procedures. The violation was described in detail in NRC Inspection Report 05000440/2010008. The inspectors reviewed the licensee's corrective action program documents, applicable procedures, and interviewed selected station personnel on the issue to provide assurance that the causes of the violation are understood by the licensee, and to provide assurance that licensee corrective actions were sufficient to address the causes.

b. Findings

No findings were identified.

.2 (Closed) Temporary Instruction 2515/179, "Verification of Licensee Responses to NRC Requirement for Inventories of Materials Tracked in the National Source Tracking System Pursuant to Title 10, Code of Federal Regulations, Part 20.2207 (10 CFR 20.2207)"

a. Inspection Scope

The inspectors confirmed that the licensee has reported the initial inventories of sealed sources pursuant to 10 CFR 20.2207 and verified that the National Source Tracking System database correctly reflects the Category 1 and 2 sealed sources in custody of the licensee. Inspectors interviewed personnel and performed the following:

- Reviewed the licensee's source inventory;
- Verified the presence of any Category 1 or 2 sources;
- Reviewed procedures for and evaluated the effectiveness of storage and handling of sources;
- Reviewed documents involving transactions of sources; and
- Reviewed adequacy of licensee maintenance, posting, and labeling of nationally tracked sources.

b. Findings

No findings were identified.

4OA6 Meetings

.1 Exit Meeting Summary

On October 13, 2011, the inspectors presented the inspection results to the Site Vice President, Mr. Mark Bezilla, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

.2 Interim Exit Meetings

Interim exits were conducted for:

- the results of the barrier integrity reactor coolant system dose equivalent iodine performance indicator verification inspection with Site Vice President, Mr. M. Bezilla, on July 15, 2011;
- the results of the Emergency Preparedness program inspection with Site Vice President, Mr. M. Bezilla, on September 16, 2011;
- the results of the radiological hazard assessment and exposure controls; occupational ALARA planning and controls; occupational dose assessment; radioactive gaseous and liquid effluent treatment; radiological environmental monitoring; the radioactive solid waste processing and radioactive material handling, storage, and transportation programs; and Temporary Instruction 2515/179 with Director of Performance Improvement, Mr. H. Hanson, on September 23, 2011; and

- the results of the occupational radiation safety performance indicator verification inspection with Regulatory Compliance, Mr. J. Pelcic, on October 17, 2011.

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

.3 Other Meetings

a. Government-to-Government Meeting

On August 11, 2011, the Senior Resident Inspector and Branch Chief met with Lake County officials at a scheduled meeting of the Lake County Supervisors Board. NRC personnel were introduced to the Board and answered questions on Perry Nuclear Power Plant's performance as posed by the Board.

b. Regulatory Performance Meeting

On August 11, 2011, the NRC held a meeting with the licensee to discuss the Perry Nuclear Power Plant annual plant performance assessment. The assessment results were previously documented in Inspection Report 05000440/2011001.

c. Annual Assessment Public Meeting

On August 11, 2011, the NRC held a formal public meeting at the Perry Township Community Center to present the 2010 end-of-cycle assessment of the Perry Nuclear Power Plant. The summary of that meeting is documented in the Publicly Available Records System (PARS) component of NRC's document system (ADAMS) as ML112360287.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Bezilla, Vice President Nuclear
R. Fili, Site Engineering Director
J. Grabnar, Site Operations Director
H. Hanson, Performance Improvement Director
L. Lindrose, Security Manger
J. Messina, Fleet Oversight Manager
P. McNulty, Radiation Protection Manager
J. Oelbracht, Chemistry Manger – Acting
M. Stevens, Maintenance Director
J. Tufts, Operations Manager

LIST OF ITEMS OPENED, CLOSED, DISCUSSED

Opened and Closed

05000440/2011004-01	NCV	Failure to Correctly Assess Risk During 'A' ESW Pump Maintenance Activities (Section 1R13)
05000440/2011004-02	NCV	Failure to Verify Radiological Conditions Prior to Entering High Radiation Areas (Section 2RS1)
05000440/2011004-03	NCV	Failure to Accurately Assess Occupational Dose (Section 2RS4)
05000440/2011004-04	SL-IV	Failure to Provide Complete and Accurate Information (Section 4OA1)

Closed

2515/179	TI	Verification of Licensee Responses to NRC Requirement for Inventories of Materials Tracked in the National Source Tracking System Pursuant to Title 10, Code of Federal Regulations, Part 20.2207 (10 CFR 20.2207) (Section 4OA5.2)
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Discussed and Closed

05000440/2010008-01	NOV	Deliberate Failure to Follow Portal Monitor Use Procedure (Section 4OA5.1)
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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.

1R04 Equipment Alignment

- SOI-M23/24; MCC, Switchgear, and Miscellaneous Electrical Equipment Area HVAC System; Revision 13
- VLI-M23/24; MCC, Switchgear and Miscellaneous Electrical Equipment Area HVAC System; Revision 7
- Drawing 912-609-00000; Switchgear and Misc. Electrical Equipment Areas HVAC System and Battery Room Exhaust; Revision AA
- GCI-0016; Scaffolding Erection, Modification or Dismantling Guidelines; Revision 18
- CR 2011-02175; NRC Identified Issues – CC679; dated September 20, 2011
- CR 2011-20179; NRC Identified Housekeeping Issues CC679; dated September 20, 2011
- CR 2011-02424; Personnel Working Around Protected Equipment; dated September 26, 2011
- Form PNPP-10203; Protected Equipment Posting Checklist; Revision date September 16, 2009
- SOI-R10 (13KV); Plant Electrical System (13KV); Revision 6
- SOI-S11; Power Transformers; Revision 12
- ELI-R11; Electrical Lineup Instruction – Station Interbus Transformers; Revision 11
- ELI-R11; Electrical Lineup Instruction – Power Transformers; Revision 4
- SVI-R10-T5227; Off-site Power Availability Verification; Revision 2
- SOI-M25/26; Control Room HVAC and Emergency Recirculation System; Revision 21
- VLI-M25/26; Control Room HVAC and Emergency Recirculation System; Revision 7
- Drawing 912-0610-00000; Control Room HVAC and Emergency Recirculation System; Revision FF

1R05 Fire Protection

- PAP-1910; Fire Protection Program; Revision 23
- PAP-0204; Housekeeping/Cleanliness Control Program; Revision 25
- FPI-0EW; Emergency Service Water Pumphouse; Revision 4
- CR 11-97224; Diesel Fuel Stored In ESWPH With No TCP, No Spill Prevention; dated July 1, 2011
- FPI-0IB; Intermediate Building; Revision 6
- FPI-0CC; Control Complex; Revision 8
- ONI-P54; Fire, Revision 15
- FPI-1AB; Auxiliary Building; Revision 3
- Drawing 101-0022-00000; Auxiliary Building Floor Plan – El. 599'-0" and 620'-6", Revision H
- Drawing 105-0015-00000; Control Complex Floor Plan – El. 654'-6"; Revision K
- CR 2011-01827; NRC ID: Enhancements to Pre-Fire Plan FPI-0CC; dated September 12, 2011

1R06 Flooding Protection Measures

- WO 200356443, Elec. M/H 2, Div 3 – Replace Broken/Missing Supports or Supports Where There Is Insufficient Support Material Due to Rust and Are Degraded to the Point of Failure; dated July 18, 2011
- PDB-H0055; Equipment Associated With Electrical Manholes; Revision 0
- NORM-ER-3112; Cable Monitoring; Revision 1
- CR 10-70298; Cable Supports in Manhole #2, Division 3 Side Found Rusted; dated January 20, 2010
- CR 08-49469; WO Did Not Adequately Identify Affected Equipment During Heavy Load Lift; dated November 13, 2008
- CR 10-74454; Documentation of Inspections of Electrical Manholes #1 and 2 Division 2 and 3; dated March 29, 2010
- Drawing 215-0717-00503; Electrical Manhole #2 Cable Racking Details, Revision A

1R11 Licensed Operator Requalification Program

- OTLC-3058201103_PY_SGC2; Cycle 3 2011 Evaluated Scenario C2; Revision 1
- NOBP-TR-1112; FENOC Conduct of Simulator Training and Evaluation; Revision 0
- NOBP-OP-0003; Operations Crew Performance Evaluations; Revision 2

1R12 Maintenance Effectiveness

- CR 11-96138; ASME Test Connection Broken; dated June 7, 2011
- CR 11-96180; Main Steam Line 'A' Steam Leak on ASME Pressure Sensing Line; dated June 8, 2011
- CR 11-96286; Piping Failure on High Pressure Turbine; dated June 10, 2011
- CR 11-96297; PY-PA-11-02: 3rd Failure of ASME Test Connection Off of Main Steam Line A; dated June 10, 2011
- EER 600689531; HP Turbine ASME Test Connection Rework; dated June 10, 2011
- WO 200463009; Replace Pipe and Cap; dated June 14, 2011
- ECP 11-0380-001; Install Welded Plug In Lieu of Pipe Nipple and Cap on Terminated HP Turbine Test Connection; Revision 0
- WO 200463593; HP Turbine ASME Test Connection Rework; dated June 11, 2011
- WO 200358942; 1R13 N32 (EHC) Rework/Testing (I&C); dated June 3, 2011
- CR 11-96684; Unplanned Power Change and ONI Entry; dated June 21, 2011
- WO 200465279; Troubleshoot/Rework Erratic Indication for TCV #4 Meter; dated June 21, 2011
- System Health Report for P45 – Emergency Service Water; 2nd Quarter 2011; dated August 10, 2011
- CR-2011-02493; EWS Screen Wash Pump A; dated September 28, 2011
- CR-2011-02521; Expanded Scope on the ESW Spray Wash A Pump; dated September 28, 2011
- CR-2011-01401; Revision to ECP 11-0558 Required; dated August 31, 2011
- CR-2011-01498; Packing Leakage from ESW to RHR A Outlet Valve has Increased; dated September 1, 2011

1R13 Maintenance Risk Assessments and Emergent Work Control

- MAI-0504; Plant Instrument Calibration and Maintenance; Revision 10
- IMI-E6-3; Fill and Vent for “E” Systems; Revision 0

- CR 02-01903; HPCS Flow Instrument Reading Incorrectly; dated June 16, 2002
- CR 02-02572; HPCS Pump Flow Indication Trending Up With HPCS Not Running With SPCU in Service; dated August 2, 2002
- CR 11-97256; HPCS Flow Trending Up With HPCS Shutdown; dated July 4, 2011
- CR 2011-00010; Heater Bay Exhaust Fan B Shaft Sheer; dated July 31, 2011
- CR 2011-00026; Heater Bay Exhaust Fan B Mechanical Failure Resulting in Reduced Turbine Building/Heater Bay Exhaust Flow; dated August 1, 2011
- NOP-OP-1007; Risk Management; Revision 10
- PYBP-POS-2-2; Protected Equipment Postings; Revision 11
- CR 2011-01557; Small Steam/Feedwater Leak on 6A Heater; dated September 3, 2011
- CR 2011-01661; Alarm Response Instruction Not Completed; dated September 7, 2011
- SOI-N27; Feedwater System; Revision 44
- CR 2011-01834; Evaluate Alternate Method of Line Warm Up for 6A Heater; dated September 12, 2011
- CR 2011-02542; Unit One Startup Transformer Failure; dated September 29, 2011
- eSOMS Narrative Logs; August 30, 2011
- CR-2011-01360; Plant Preliminarily Entered Green Risk Following ESW A Packing Replacement; dated August 30, 2011
- CR-2011-01521; Risk and Potential Consequences of Adjusting ESW Pump A Packing were not fully Recognized; dated September 2, 2011
- CR-2011-01289; Packing Adjustment Results in Packing Replacement on A ESW Pump; dated August 29, 2011
- CR-2011-01340; Unexpected Half Scram B/D; dated August 30, 2011
- NOP-OP-1007; Risk Management; Revision 10; dated June 14, 2011

1R15 Operability Determinations and Functionality Assessments

- CR 2011-00624; ASME ISI Exams of the RPV Skirt Was Not Performed in Previous Two 10-year Intervals; dated August 15, 2011
- Operational Decision Making Issue for CR 2011-00026; Heater Bay Exhaust Fan B Mechanical failure Resulting in Reduced Turbine Building/Heater Bay Exhaust Flow; dated August 1, 2011
- CR 2011-01862; Anomaly During Performance of SVI-C71T0046 Section 5.1.4; dated September 13, 2011
- eSOMS Narrative Logs; September 13, 2011
- eSOMS Narrative Logs; September 26 - 27, 2011
- CR 2011-02429; Improvement Opportunity for Risk Significant System Work; dated September 26, 2011
- CR 2011-02474; Restoration of the Unit 1 Startup Transformer; dated September 27, 2011
- PNPP Change Request 96-109; Incorporate Administration Changes – Technical Specifications; dated May 24, 1996
- Operations Standing Order; Fuel Pool Cooling System declared Non-Functional but available; dated September 2, 2011
- Prompt Functionality Assessment for CR 11-88941; Revision 0; dated September 2, 2011
- CR-2011-01480; PFA for FPCC to PFD isolation valve seat leakage condition is concluding that the functionality of the FPCC system cannot be assured; dated September 1, 2011

1R18 Plant Modifications

- CR 11-97305; Potential Part 21 Issue on Appendix R Design for Breaker Ammeters; dated July 5, 2011

- ECP 11-0422-0000; Temporary Separation of Control Room Ammeter Circuit for Breaker EH1106 and EH1107; Revision 0
- ECP 11-0422-0001; Temporary Separation of Control Room Ammeter Circuit for Breaker EH1106; Revision 0
- ECP 11-0422-0002; Temporary Separation of Control Room Ammeter Circuit for Breaker EH1107; Revision 0
- WO 200468289; Implement Temp Mod 11-0422-001 to Bypass Ammeter for EH1106 in the Control Room; dated July 8, 2011
- WO 200468362; Implement Temp Mod 11-0422-002 to Bypass Ammeter for EH1107 in the Control Room; dated July 8, 2011
- ECP 11-0492-0000; Supplemental Cooling Air to Steam Tunnel Cooling System; Revision 0
- ECP 11-0492-0001; Installation of Supplemental Cooling Air to Steam Tunnel Cooling System; Revision 0
- CR 2011-00314; Wrong Fuses Installed per ECP-11-0491-0001; dated August 8, 2011

1R19 Post-Maintenance Testing

- WO 200149246; Replace Diesel Fire Pump; dated July 18, 2011
- WO 200407814; Annual and Two Year Maintenance [Diesel Fire Pump]; dated July 11, 2011
- PTI-P54-P0035; Electric and Diesel Fire Pump Monthly Operability Test; Revision 14
- PTI-P54-P0036; Diesel Fire Pump Flow Data and Control Panel Functional Test; Revision 11
- EER 600697046; Re-perform Flow Test on the Diesel Fire Pump; dated July 16, 2011
- CR 11-97463; Diesel Fire Pump Fuel Oil Truck Turned Away; dated July 8, 2011
- CR 11-97504; Work Delay on Diesel Driven Fire Pump; dated July 9, 2011
- CR 11-97889; Unsatisfactory Leader in the Field Observation. DFP Flow Testing; dated July 19, 2011
- CR 11-97890; NRC-ID of Two Safety Issues During Performance of DFP Testing; dated July 19, 2011
- WO 200328849; "New PM" Routine Trip Unit Replacement; dated July 18, 2011
- SVI-E22-T0195-G; HPCS Suppression Pool High Level Channel G Functional for 1E22-N655G; Revision 4
- NOBP-LP-2603; Event-Free Tools and Verification Practices; Revision 4
- WO 200404427; Replace APRM G 15V Regulator Cards Z408, z425 and Z427; Revision 1
- SVI-C51-T0030-G; APRM G Channel Calibration for 1C51-K605G; Revision 12
- CR 2011-01071; LPRM 4A-16-17 Upscale Alarms; dated August 24, 2011
- WO 200319090; Replace Master Trip Unit: Main Steam Line Flow "D"; Revision 0
- SVI-E31-T0074-H; MSL High Flow Channel D Functional for 1E31-N687D and 1E31-N689D; Revision 4
- SVI-E31-T1405-D; MSL High Flow Channel D Response Time for 1E31-N686D, 1E31-N687D, 1E31-N688D, and 1E31-N689D; Revision 7
- WO 200323585; "New PM" Replace Rosemount 510/710 Card; Revision 0
- SVI-B21-T0061B; RPV Low Level 1 and 2 Channel B Functional for 1B21-N681B; Revision 8
- CR 2011-01557; Small Steam/ Feedwater Leak on 6A Heater; dated September 3, 2011
- WO 200474861; Steam Leak/CR 2011-01557; Revision 0
- SOI-N27; Feedwater System; Revision 44

1R22 Surveillance Testing

- SVI-B21-T0035-C; RPV Level 3 and Level 8 and RHR Shutdown Isolation Channel C Calibration for 1B21-N680C; Revision 11
- PTI-E51-P0005; Dynamic Diagnostic Testing of RCIC System Valves; Revision 1

- SVI-D23-T1213; Suppression Pool Average Temperature; Revision 8
- WO 200313063; ECP – MOV Static and Dynamic Test, Post Mod Testing for ECP 02-0357; dated August 1, 2011
- WO 200416364; 1E51F0022 Dynamic Diagnostic Testing of RCIC System Valves; dated July 28, 2011
- CR 11-98229; Lube Manual Updated to Specify RCIC Turbine Oil That is on QC Hold; dated July 26, 2011
- CR 11-98231; Quick Start Position for 1E51-F022 Not Suitable; dated July 26, 2011
- CR 11-98297; RCIC Flow Controller Process Needle Sticks Down Scale; dated July 27, 2011
- Dwg 302-631; Reactor Core Isolation Cooling System; Revision EE
- SVI-E12-T2003; RHR C Pump and Valve Operability Test; Revision 27
- Dwg 302-642; Residual Heat Removal System; Revision HH
- Dwg 302-643; Residual Heat Removal System; Revision ZZ
- CR 11-98341; UNSAT Observation – Dynamic Test of 1E51-F022 (RCIC Full-Flow Test Valve); dated July 27, 2011
- SVI-C85-T1314; Turbine Bypass Valve Operability Test; Revision 7
- SVI-C11-T1006; Control Rod Maximum Scram Insertion Time; Revision 14
- WO 200418711; Type C Local Leak Rate Test of 1M14 Penetration V314; dated September 16, 2011
- SVI-M14-T9314; Type C Local Leak Rate Test of 1M14 Penetration V314; Revision 11

1EP2 Alert and Notification System Evaluation

- Emergency Plan for Perry Nuclear Power Plant, Section 7.4; Prompt Alert Siren System; Revision 32
- PSI-0021; Prompt Alert System; Revision 2
- PYBP-ERS-0028; Prompt Alert Siren System Emergency Planning Zone Testing; Revision 2
- FEMA Approval of Perry Nuclear Power Plant Prompt Alert and Notification System Approval; September 8, 1986
- PNPP No. 6861; Prompt Alert System Siren Test Reports; November 2009 – June 2011 PNPP No. 6813; 2009 and 2010 Prompt Alert System Annual Maintenance Checklists

1EP3 Emergency Response Organization Staffing and Augmentation System

- Emergency Plan for Perry Nuclear Power Plant, Section 5; Organizational Control of Emergencies; Revision 32
- Emergency Plan for Perry Nuclear Power Plant, Section 6; Emergency Measures; Revision 32
- Emergency Plan for Perry Nuclear Power Plant, Section 7; Emergency Facilities and Equipment; Revision 32
- Emergency Plan for Perry Nuclear Power Plant, Section 8; Maintaining Emergency Preparedness; Revision 32
- EPI-A2; Emergency Actions Based on Event Classification, Revision 15
- EPI-B1; Emergency Notification System, Revision 21
- EPI-B5; Personnel Accountability/Site Evacuation; Revision 14
- NOP-LP-5011; Emergency Response Drill and Exercise Program; Revision 01
- PTI-GEN-P0003; Quarterly Testing of the Emergency Pager System; December 2009 - August 2011
- PSI-0017; Drills and Exercises for Emergency Planning; Revision 10
- PYBP-ERS-0033; Off-Hour Unannounced Drill Conduct; Revision 2
- PYB-PTI-GENP0003; Quarterly Testing of the Emergency Pager System Records

- PY-SA-09-042; Emergency Response Organization Unannounced Drive-In Drill Report; February 9, 2009
- SN-SA-10361; Emergency Response Organization Unannounced Drive-In Drill Report; November 17, 2010
- Emergency Response Telephone Directory; Revision 2011-2
- FENOC Information Tracking System ERO Position Requirements; September 14, 2011
- CR 2011-00944; ERO Unannounced Test 15 Minute Call In Time Not Met; August 23, 2011
- CR 2011-01981; Identified Deficiencies in 3Q10 and 4Q10 Quarterly Augmentation Test Documentation; September 15, 2011

1EP5 Correction of Emergency Preparedness Weaknesses

- MS-C-10-24; Fleet Oversight Audit Report of Emergency Preparedness; December 16, 2010
- MS-C-09-24; Fleet Oversight Audit Report of Emergency Preparedness; December 18, 2009
- SN-SA-2011-22; Self-Assessment Snapshot of the Perry Emergency Response Section; September 13, 2011
- SN-SA-11-163; February 23, 2011 Drill Self-Assessment Report; March 23, 2011
- SN-SA-10-102; September 28, 2010 Exercise Self-Assessment Report; October 10, 2010
- CR-G202-2011-98389; FITS Qualification Matrix Is Incomplete; July 29, 2011
- CR-G202-2011-98188; Condition Report for Pager Test Failure Not Complete By Due Date; July 26, 2011
- CR-G202-2011-97849; Complaint That Siren Sound Level Was Low; July 18, 2011
- CR-G202-2011-97703; Siren L52 Activation Failure during Quarterly Audible Test; July 14, 2011
- CR-G202-2011-97322; Second EOF Communicator Position Not Identified During Weekly Turnover; July 6, 2011
- CR-G202-2011-96693; Pager Test Failure; June 21, 2011
- CR-G202-2011-90654; ERO Drill-ENS and HPN Usage Documentation; March 9, 2011
- CR-G202-2011-90650; ERO Drill-NRC Simulator Control Room Notification Used Wrong Clock; March 9, 2011
- CR-G202-2011-9052-; ERO Drill-Radiation Protection and Chemistry Technician Unavailability; March 7, 2011
- CR-G202-2011-90513; ERO Drill-Missed Event Notification; March 7, 2011
- CR-G202-2011-88636; Siren Quiet Test Not Performed Due to Offsite Emergency; January 24, 2011
- CR-G202-2010-86471; EP Procedure Change Packages Have Incomplete Documentation; December 1, 2010
- CR-G202-2010-85981; Loss of AC Power to 6 ANS Sirens Due to High Winds; November 17, 2010
- CR-G202-2010-84296; Information for TSC Unavailability Not Communicated to ERO; October 14, 2010
- CR-G202-2010-84093; Dose Assessment Team Performance Trend during 3rd Quarter; October 11, 2010
- CR-G202-2010-83623; Exercise-Unresolved Item for Adequacy of HPN Communications; October 4, 2010
- CR-G202-2010-83423; Exercise-Radiation Monitoring Team Positioned Between Lakeshore and Plume; September 30, 2010
- CR-G202-2010-83331; Exercise-CDAP Assessment with Field Data Yields Unexpected Results; September 29, 2010

1EP6 Drill Evaluation

- Perry ERO Drill Scenario Guide; dated September 28, 2011

2RS1 Radiological Hazard Assessment and Exposure Controls

- CR 09-55098; Negative Trend in Radiological Postings; dated March 10, 2009
- CR 09-55585; Contract Employee Disregarded Portal Monitor ALARM in PAF When Exiting Plant; dated March 17, 2009
- CR 10-80752; Notice of Violation, Employee Disregarded Portal Monitor Alarm; dated August 4, 2010
- CR 11-93976; Dose Rate Alarm – NPS Pipefitter; dated May 2, 2011
- CR 11-94374; Worker Received Dose Rate Alarm in Containment Steam Tunnel; dated May 9, 2011
- CR 11-97788; Dose Rate Alarms/Briefing Deficiencies Required Additional Investigation; dated July 15, 2011
- NOP-OP-4001; Radiation Protection Program; Revision 02
- NOP-OP-4503; Personnel Contamination Monitoring; Revision 06
- RWP 110002; Operations; Revision 00
- RWP 116037; RFO13 SRM-C Cable Reinsertion; Revision 00
- RWP 116042 RFO 13 Radiography; Revision 00

2RS2 Occupational ALARA Planning and Controls

- FENOC Source Term Reduction Excellence Plan; dated July 12, 2011
- NOBP-OP-3501; Source Term Reduction Committee; Revision 02
- NOBP-OP-4111; 5 Year Exposure Reduction Plan; Revision 00

2RS4 Occupational Dose Assessment

- HPI-B0003; Processing Personnel Dosimetry; Revision 27
- HPI-J0054; Calibration of the ABACOS 2000 Whole Body Counter System; Revision 01
- NOP-OP-4201; Routine External Exposure Monitoring; Revision 01
- NOP-OP-4204; Special External Exposure Monitoring; Revision 05
- NOP-OP-4205; Dose Assessment; Revision 03
- NOP-OP-4206; Bioassay Program; Revision 00
- NOP-OP-4207; Occupational Exposure Reporting; Revision 00
- Whole Body Count Reports; Selected Records; various dates
- NOP-OP-4204-04; Effective Dose Equivalent Dose Determination; Revision 01
- NRC Letter to First Energy Nuclear Operating Company; Re: Safety Evaluation for Application of Weighting Factors for External Exposure; dated November 20, 2008
- CR 11-02336; Incorrect Application of Effective Dose Equivalent; dated September 23, 2011

2RS6 Radioactive Gaseous and Liquid Effluent Treatment

- Annual Environmental and Effluent Release Report; dated 2009
- Annual Environmental and Effluent Release Report; dated 2010
- CHI-0053; Operation of the Gamma Spectroscopy System; Revision 13
- CR 10-87346; Fuel Handling Building Exhaust Fan C Plenum Charcoal Sample Failed Analysis; dated December 20, 2010
- CR 11-00693; Effluent Monitoring Sampler Found Not Running; dated August 17, 2011

- CR 11-02291; NRC Effluents Observation on Ventilation Charcoal Beds and correction of deficient performance; dated September 22, 2011
- HPI-A0003; Radiation Monitor Alarm Setpoint Determination; Revision 06
- NOP-ER-3004; FENOC Maintenance Rule Program; Revision 01
- NOP-OP-2012; Groundwater Monitoring; Revision 06
- NOP-WM-1003; Nuclear Maintenance Notification Initiation, Screening, and Minor Deficiency Monitoring process; Revision 05
- Off-Site Dose Calculation Manual (ODCM); Revision 18
- PAP-1105; Surveillance Test Control; Revision 13
- PAP-1126; Ventilation Filter Testing Program; Revision 00
- PY-SVI-D17T8034; Unit 1 Plant Vent Effluent System and Sampler Flow Rate Monitor Functional/Calibration; Various dates
- PY-SVI-M15T3015; "A" Annulus Exhaust Gas Treatment Charcoal Adsorber Operability Test and Plenum Inspection; Various dates
- PY-SVI-M15T3015; "B" Annulus Exhaust Gas Treatment Charcoal Adsorber Operability Test and Plenum Inspection; Various dates
- PY-SVI-M26T3020; "A" Control Room Emergency Recirculation Charcoal Adsorber Operability Test and Plenum Inspection; Various dates
- PY-SVI-M26T3020; "B" Control Room Emergency Recirculation Charcoal Adsorber Operability Test and Plenum Inspection; Various dates
- PY-SVI-M40T5330; "A" Fuel Handling Building Ventilation Charcoal Adsorber Operability Test and Plenum Inspection; Various dates
- PY-SVI-M40T5330; "B" Fuel Handling Building Ventilation Charcoal Adsorber Operability Test and Plenum Inspection; Various dates
- PY-SVI-M40T5330; "C" Fuel Handling Building Ventilation Charcoal Adsorber Operability Test and Plenum Inspection; Various dates
- SVI-D17-T8046; Turbine Building/Heater bay Sampler Flow rate Monitor Calibration for 1H51-P756; Revision 06
- System Description Manual – Containment Vessel and Drywell Purge System; Revision 07

2RS7 Radiological Environmental Monitoring Program

- CR 09-59809; REMP Composite Water Sampler Found Not Running; dated May 28, 2009
- CR 09-68269; Contamination Found in Piezometer Tubes No. 6 and No. 7; dated November 25, 2009
- CR 10-78248; Piezometer Tube 6 Tritium Value Above Threshold of 2000 pCi/L; dated June 4, 2010
- CR 10-78718; REMP Air Samples Collected 6/16/10 Not Shipped to Vendor Lab; dated June 23, 2010
- CR 10-81956; ODCM REMP Sample Location Inconsistencies; dated August 30, 2010
- CR 11-90405; Air Sample Pump Found Not Running; dated March 3, 2011
- CR 11-92086; Detectable I-131 on REMP Air Samples Below Reportable Levels; dated March 31, 2011
- CR 11-91762; Radio-Iodine (I-131) Detected in Manhole Samples and Standing Water; dated March 25, 2011
- CR 11-94263; Positive I-131 Results in Milk after Fukushima Accident; dated April 19, 2011
- CR 11-97741; NRC Comment: Work Management Prioritization of ODCM Equipment; dated July 14, 2011
- CR 11-02282; ODCM discrepancy identified during Fall NRC REMP Inspection; dated September 22, 2011

- Oversight and Process Improvement Nuclear Quality Assessment, Chemistry; dated January 01 through April 30, 2011
- Perry Nuclear Power Plant Annual Environmental and Effluent Release Report; 2010
- Perry Nuclear Power Plant Annual Environmental and Effluent Release Report; 2009
- REMP-0009; Surface and Drinking Water Sampling; Revision 09
- REMP-0017; Land Use Survey for Residence, Gardens, and Milk-Producing Animals; Revision 07
- REMP-0023; Air Sample Collection; Revision 08
- REMP-0024; Air Sampler Maintenance and Calibration; Revision 02
- REMP-0024; Air Sampler Maintenance and Calibration; Attachment 1; dated May 16, 2011
- REMP-0024; Air Sampler Maintenance and Calibration; Attachment 1; dated September 27, 2010
- Work Order 200435444; Meteorological Monitoring; System B Air Temperature and Delta Air Temperature Calibration for D51-N707 and D51-N709; dated June 10, 2011
- Work Order 200369879; Meteorological Monitoring; System B Air Temperature and Delta Air Temperature Calibration for D51-N707 and D51-N709; dated November 1, 2010
- Work Order 200435640; Meteorological Monitoring; System B, 60 Meter Wind Direction Channel Calibration for D51-N762; dated June 13, 2011
- Work Order 200369653; Meteorological Monitoring; System B, 60 Meter Wind Direction Channel Calibration for D51-N762; dated November 3, 2010
- Work Order 200369650; Meteorological Monitoring; System B, 60 Meter Wind Speed Channel Calibration for D51-N761; dated June 4, 2011
- Work Order 200369649; Meteorological Monitoring; System B, 60 Meter Wind Speed Channel Calibration for D51-N761; dated November 3, 2011

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

- CFR 61 Data; Bead Resin; dated March 17, 2009
- 10 CFR 61 Data; Powered Resin; dated April 16, 2010
- CR 08-46535; Incomplete Survey Information on Radwaste Liner Shipment; dated September 18, 2008
- CR 09-65546; Process Control Program (PCP) Needs Updated; dated October 07, 2009
- CR 09-65584; MS-C-09-10-03 Radwaste Paperwork Signed without Documented Qualification; dated October 7, 2009
- CR 10-71097; Tractor Separates from Cask Shipment Trailer; dated February 3, 2010
- CR 11-89116; Loading of Radwaste Legacy Filters; dated February 3, 2011
- CR 11-93565; Material Condition of Sealand 14; dated April 27, 2011
- CR 11-97801; Improvements in Rad Material Identification Identified; dated July 15, 2011.
- CR 11-02281; NRC identified RW-91-01 Radwaste Shipping/Handling not Linked to Radioactive Materials Shipper Qualification; dated September 22, 2011
- CR 11-02239; NRC Radwaste Inspection Identified. Issue with Shipment 11-3054; dated September 21, 2011
- CR 11-02306; NRC Radwaste Inspection Identified Warf/Risb/Ossc Yard Design Basis; dated September 23, 2011
- CR 11-02280; NRC-Identified Discrepancy in FITS for Site Radioactive Materials Shipper Training; dated September 22, 2011
- CR 11-02302; NRC Radwaste Inspection Identified Item in HPI-H-0005; dated September 23, 2011
- CR 11-02324; NRC Observations of shipments 11-3046 and 11-3054; dated September 23, 2011

- CR 11-02285; NRC Radwaste Inspection of Shipment 11-3046; dated September 22, 2011
- CR 11-02304; During NRC Radwaste Inspection Identified Sealand 14 Material Condition; dated September 23, 2011
- Lesson Plan RW-9101-01; Radwaste Shipping/Handling; Revision 06
- HPI-H0005; 10 CFR61 Compliance Sampling Program; Revision 01
- HPI-K0009; Operation of the WARF, RISB and OSSC Yard; Revision 00
- NOP-OP-5201; Shipment of Radioactive Material/Waste; Revision 02
- Process Control Program; Revision 11
- PY-0G50; Liquid Radwaste Disposal; dated November 2009
- Radioactive Waste Shipment Number 11-1017; dated March 09, 2011
- Radioactive Material Shipment Number 11-3046; dated May 12, 2011
- Radioactive Material Shipment Number 11-3054; dated June 17, 2011
- Radioactive Waste Shipment Number 10-1023; dated June 18, 2010
- Radioactive Material Shipment Number 11-3056; dated June 20, 2011
- RPI-1301, Movement of Radioactive Material/Waste Outside of the Radiologically Controlled Areas and Onsite Interim Storage; Revision 9

40A1 Performance Indicator Verification

- NOBP-LP-4012; NRC Performance Indicators; Revision 3
- NOBP-LP-4012-06; MSPI Data Sheets for Heat Removal System from July 2010 to June 2011; Revision 2
- NOBP-LP-4012-07; MSPI Data Sheets for Residual Heat Removal System from July 2010 to June 2011; Revision 2
- NOBP-LP-4012-19; MSPI Data Sheets for Emergency Service Water from July 2010 to June 2011; Revision 2
- Mitigating Systems Performance Index Basis Document; Revision 4
- Mitigating Systems Performance Index Basis Document; Revision 5
- PYBP-DES-0011; Mitigating Systems Performance Index; Revision 1
- PYBP-DES-0011; Mitigating Systems Performance Index; Revision 2
- eSOMS Narrative Logs; July 2010 to June 2011
- MSPI Derivation Reports for all MSPI Monitored Systems; July 2010 to June 2011
- Perry Nuclear Power Plant Drill/Exercise Attendance; October 2009 – June 2010
- NOBP-LP-4012-11; Emergency Preparedness Drill/Exercise Performance Records; July 2010 – June 2011
- NOBP-LP-4012-12; Emergency Response Organization Drill Participation Records; September 2010 – June 2011
- Drill Participation Clarification Event/Drill Credit Matrix; Revision 3
- NOBP-LP-4012-13; Alert and Notification System Reliability Records; July 2010 - June 2011
- PNPP No. 6816; Prompt Alert System Siren Test Reports; July 2010 – June 2011
- Emergency Response Organization Participation Key Positions Records; September 2010 – June 2011
- CHI-0053; Operation of the Gamma Spectroscopy System; Revision 13
- CR 11-00473; NRC Potential Violation – Discrepant Performance Indicator for April 2011; dated August 11, 2011
- NOBP-LP-4012; NRC Performance Indicators; Revision 03 and Selected Records
- RCS Specific Activity Monthly Reports; Various dates 2010 Through June 2011
- TS 3.4.8; RCS Specific Activity and Bases Documents; Amendment No. 131
- TID-14844; Calculation of Distance Factors for Power and Test Reactor Sites; Atomic Energy Commission; dated 1962

4OA2 Identification and Resolution of Problems

- CRs for the period January 1, 2011, through June 30, 2011

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

- LER 2011-001-00; Fire Protection Design Vulnerability Results in an Unanalyzed Condition; dated August 23, 2011
- CR 2011-02542; Unit One Startup Transformer Failure; dated September 29, 2011
- 50.72 Event Report for Shutdown Required by Technical specifications due to Transformer Fault; dated October 2, 2011

4OA5 Other Activities

- 2011 NSTS Annual Inventory Reconciliation; dated January 2011
- NOP-SS-8001; FENOC Activity Tracking; Revision 01

LIST OF ACRONYMS USED

ALARA	As-Low-As-Is-Reasonably-Achievable
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CFR	Code of Federal Regulations
CMS	central monitoring system
CR	condition report
DDE	deep-dose equivalent
ED	electronic dosimetry
EDE	effective dose equivalent
ESW	emergency service water
FAQ	frequently asked question
FENOC	FirstEnergy Nuclear Operating Company
HRA	high radiation area
ICDPD	incremental core damage probability deficit
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LER	Licensee Event Report
MSPI	Mitigating Systems Performance Index
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PI	performance indicator
RWP	radiation work permit
SDP	Significance Determination Process
SL	severity level
SRM	source range monitor
TI	Temporary Instruction
TS	Technical Specification
URI	Unresolved Item
USAR	Updated Safety Analysis Report

M. Bezilla

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Sincerely,

/RA/

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

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Letter to M. Bezilla from J. Cameron dated November 1, 2011.

SUBJECT: PERRY NUCLEAR POWER PLANT NRC INTEGRATED INSPECTION
REPORT 05000440/2011004

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