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

May 5, 2009

EA-07-199

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

SUBJECT: PERRY NUCLEAR POWER PLANT NRC INTEGRATED INSPECTION REPORT 05000440/2009002; AND STATUS OF CONFIRMATORY ORDER EA-07-199

Dear Mr. Bezilla:

On March 31, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Perry Nuclear Power Plant. The enclosed report documents the inspection findings which were discussed on April 16, 2009, with you and members of your staff. The enclosed report also documents the completion of Confirmatory Order EA-07-199.

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

Based on the results of this inspection, two NRC-identified findings and four self-revealing findings of very low safety significance (Green) were identified. All of the findings were determined to involve violations of NRC requirements. Additionally, one licensee-identified violation, which was determined to be of very low safety significance, is listed in Section 4OA7 of this report. However, because of the findings' very low safety significance and because they are entered into your corrective action program, the NRC is treating the findings as non-cited violations (NCV(s)) consistent with Section VI.A.1 of the NRC Enforcement Policy.

If you contest any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspectors' Office at 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. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

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

Sincerely,

/RA/

Jamnes L. Cameron, Chief
Reactor Projects Branch 6

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

Enclosure: Inspection Report 05000440/2009002
w/Attachment: Supplemental Information

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

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Letter to M. Bezilla from J. Cameron dated May 5, 2009

SUBJECT: PERRY NUCLEAR POWER PLANT NRC INTEGRATED INSPECTION REPORT 05000440/2009002; AND STATUS OF CONFIRMATORY ORDER EA-07-199

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-440
License No:	NPF-58
Report No:	050000440/2009002
Licensee:	FirstEnergy Nuclear Operating Company (FENOC)
Facility:	Perry Nuclear Power Plant, Unit 1
Location:	Perry, Ohio
Dates:	January 1, 2009, through March 31, 2009
Inspectors:	M. Franke, Senior Resident Inspector M. Wilk, Resident Inspector M. Phalen, Health Physicist J. Cassidy, Senior Health Physicist T. Bilik, Reactor Inspector G. Hausman, Senior Reactor Inspector J. Robbins, Reactor Engineer G. Wright, Project Engineer M. Munir, Reactor Inspector
Observers:	R. Leidy, Ohio Department of Health Bureau of Radiation Protection
Approved by:	Jamnes L. Cameron, Chief Branch 6 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000440/2009002; 01/01/2009 – 03/31/2009; Maintenance Effectiveness; Refueling and Other Outage Activities; Surveillance Testing; Access Control to Radiologically Significant Areas; Radioactive Material Processing and Transportation; Follow-up of Events and Notices of Enforcement Discretion; and Other Activities.

The inspection was conducted by resident and regional inspectors. The report covers a 3-month period of resident inspection. Six green findings, all of which were non-cited violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609 “Significance Determination Process” (SDP). Cross-cutting aspects were determined using IMC 0305, "Operating Reactor Assessment Program." Findings for which the SDP does not apply may be "Green," or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated July 2006.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Initiating Event

- Green. A finding of very low safety significance and associated NCV of 10 CFR 50.65(a)(1) was identified by the inspectors for the licensee's failure to take reasonable corrective action to avoid recurrence of unavailability of a component in accordance with the maintenance rule. The inspectors determined that the licensee failed to implement the corrective action identified by the expert review panel, after the motor feedwater pump (MFP) did not meet licensee established goals. Specifically, the licensee failed to continuously run a purifier on the MFP lube oil sump to ensure the MFP was capable of fulfilling its intended function. On August 2, 2008, the portable lube oil purifier failed and the licensee did not connect a readily available purifier until after water intrusion into the oil rendered the MFP unavailable on August 7, 2008, and the plant entered YELLOW probabilistic safety assessment (PSA) risk. The licensee entered this issue into their corrective action program, attached the available lube oil purifier to restore the MFP, and purchased an additional lube oil purifier to ensure the plant would continue to implement the program's corrective action to avoid further MFP unavailability.

  The finding was determined to be more than minor because the finding was associated with the Initiating Events cornerstone attribute of equipment performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations. Specifically, the failure to implement a corrective action challenged the availability of a risk-significant component with a known degraded equipment problem and placed the plant in unplanned YELLOW PSA risk. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution per IMC 0305 P.1(c) because the organization failed to properly prioritize the purification system repair. The inspectors determined that the finding was of very low safety significance following an SDP review. (Section 1R12)

- Green. The inspectors identified a finding of very low safety significance and an NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control." The inspectors determined that the licensee failed to perform required nondestructive testing on the reactor

pressure vessel (RPV) head strongback. Specifically, on February 25, 2009, the licensee failed to conduct a complete nondestructive examination (NDE) of a structural weld associated with the strongback lifting device. As part of their corrective actions, the licensee entered the issue into its corrective action program and performed a functionality assessment of the RPV head strongback, prior to lifting the RPV head, to assure that the strongback could perform its design function.

The finding was determined to be more than minor because the finding was associated with the Initiating Events cornerstone attribute of equipment performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the purpose of the NDE testing of RPV head strongback major load carrying welds and critical areas is to limit the likelihood of an RPV head strongback structural component failure, and hence, to assure safe load handling of heavy loads over the reactor core or over safety-related systems. The inspectors determined that the finding was of very low safety significance following a qualitative SDP review. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution per IMC 0305 P.1(c), because the licensee failed to thoroughly evaluate corrective actions to ensure they appropriately addressed the identified issue. (Section 1R20)

- Green. A finding of very low safety significance and associated NCV of Technical Specification Section 5.4.1 was self-revealed on March 7, 2009, when main steam line plug seal pressure began to drop unexpectedly while the reactor cavity was flooded for refueling operations. Operators failed to conduct an adequate shift turnover regarding the configuration of service air isolation valves to containment affecting the main steam line plugs and subsequently isolated the air supply to the plug seals. As part of their immediate corrective actions, licensee personnel restored air to the main steam line plug seals and entered the issue into their corrective action program.

  The finding was determined to be more than minor because the finding was associated with the Initiating Events cornerstone attribute of configuration control and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, loss of air pressure to main steam line seals increased the likelihood of a loss of reactor water inventory event during refueling operations. The finding was determined to be of very low safety significance following a Phase II SDP review. This finding has a cross-cutting aspect in the area of Human Performance, work control, per IMC 0305 H.3(b) because the licensee did not appropriately coordinate work activities associated with service air system testing. (Section 1R22)

- Green. A finding of very low safety significance and associated NCV of Technical Specification Section 5.4.1 was self-revealed on February 3, 2009, when the control room received an unexpected high pressure core spray (HPCS) pump room sump level high alarm and entered Emergency Operating Procedure (EOP) – 3, "Secondary Containment Control." The licensee did not properly control a maintenance activity on the HPCS system resulting in unexpected water spray in the HPCS pump room. As part of their immediate corrective actions, licensee personnel recovered from the drain down of the system and entered the issue into their corrective action program.

  This finding was considered more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone and adversely affected the

cornerstone objective of limiting the likelihood of events that upset plant stability. The event challenged shutdown operations as operators entered the EOP and responded to reports of significant water spray entering the pump room. The finding was determined, through an SDP analysis, to be of very low safety significance as no mitigation equipment or functions were affected. The primary cause of this finding was related to the cross-cutting aspect in the area of Human Performance per IMC 0305 H.3(a) because the organization failed to appropriately plan work activities that impact plant structures and systems, and failed to ensure appropriate contingencies were in place to perform a maintenance activity. (Section 4OA3)

Cornerstone: Occupational Radiation Safety

- Green. A self-revealed finding of very low safety significance and an associated NCV of 10 CFR 20.1501 was identified for the failure to perform an adequate survey (evaluation) to determine whether the use of respiratory protection equipment and/or engineering controls were necessary to maintain the total effective dose equivalent As-Low-As-Is-Reasonably-Achievable (ALARA). Specifically, a high efficiency particulate air vacuum cleaner that was used during a spent fuel pool clean-up campaign was opened without fully evaluating the potential hazards. As a result, two contracted decontamination technicians received an unplanned intake of radioactive materials. As immediate actions, the licensee assessed the internal dose to the workers and secured the area to minimize additional exposure. The licensee entered the issue into its corrective action program as CR 08-33692.

  The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that not performing adequate evaluations to determine the use of respiratory protection equipment and/or engineering controls for the work resulted in unplanned, additional dose to workers. The finding was determined to be of very low safety significance because it was not an ALARA planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. The finding was determined to have a cross-cutting aspect in the Human Performance area per IMC 0305 H.4(c), because the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported. (Section 2OS1.1).

Cornerstone: Public Radiation Safety

- Green. A self-revealed finding of very low safety significance and an associated NCV of Title 10 CFR 71.5 was identified. Specifically, the licensee failed to comply with Title 49 CFR 172.203(c) and shipped a package of radioactive material with a transport manifest that did not document all applicable hazardous substances. The issue was entered in the licensee's corrective action program as CR 07-23098. The licensee's immediate corrective actions were to provide a corrected copy of the transport manifest to the waste processor and to initiate an apparent cause investigation to identify corrective actions to avoid recurrence.

  The finding is more than minor because it was associated with the Public Radiation Safety cornerstone attribute of Program and Process (transportation program) and affected the cornerstone objective, in that, providing incorrect information, as part of

hazard communication, could impact the actions of response personnel. The finding was determined to be of very low safety significance because using the Public Radiation Safety SDP, the inspector determined that: (1) radiation limits were not exceeded; (2) there was no breach of a package during transit; (3) it did not involve a certificate of compliance issue; (4) it was not a low level burial ground nonconformance; and (5) it did not involve a failure to make notifications or provide emergency information. Because the finding was not indicative of current performance, a cross-cutting aspect was not identified. (Section 2PS2)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

The plant began the inspection period at 100 percent power. On February 22, 2009, at 11:56 p.m., operators disconnected the main generator from the electrical grid to start Perry's twelfth refueling outage (RFO). Shortly after midnight on February 23, 2009, operators inserted a manual scram and the plant entered Mode 3. The plant entered Mode 4 at 5:07 a.m. the same morning. On February 25, 2009, at 9:53 p.m., the plant entered Mode 5. The licensee performed a full core fuel offload to facilitate planned outage maintenance activities. At the end of the inspection period, core fuel reload activities had started and the plant was in Mode 5.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

Because extreme cold conditions and high winds were forecast in the vicinity of the facility for the week of February 9, 2009, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. During the week of February 9, 2009, the inspectors walked down the switchyard and protected area safety-related buildings to determine whether their functions could be affected by the extreme cold conditions forecast for the facility. The inspectors observed insulation, heat trace circuits, space heater operation, and weatherized enclosures to ensure operability of affected systems. The inspectors reviewed licensee procedures and discussed potential compensatory measures with control room personnel. The inspectors focused on plant management's actions for implementing the station's procedures for ensuring adequate personnel for safe plant operation and emergency response would be available. Specific documents reviewed during this inspection are listed in the Attachment.

This inspection constituted one readiness for impending adverse weather condition sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- Unit 1 Division 2 battery during maintenance on Division 1, the week of January 12, 2009;
- 'A' Emergency Closed Cooling Water system during Division 2 maintenance the week of February 9, 2009; and
- Division 1 Emergency Diesel Generator (EDG) fuel oil system, during the week of February 23, 2009.

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

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

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On February 6, 2009, the inspectors performed a complete system alignment inspection of the residual heat removal (RHR) system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

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

- Fire Zone 1CC-3c; Unit 1 - Division 1 Switchgear Room, elevation 620' - 6";
- Fire Zone 1CC-3a, 3b; Unit 1 - Division 2 and 3 Switchgear Rooms, elevation 620' - 6";
- Fire Zone 1DG-1A, and 1B Diesel Generator Building 620'6" – Division 2 and 3 Diesel Generator Rooms;
- Fire Zone 1DG-1C, Diesel Generator Building 620'6" – Division 1 Diesel Generator Room;
- Fire Zone 1AB-1A, 1C, 1G and 1AB-2; Auxiliary Building 574' and 599' elevations.

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

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

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (ISI) Activities (71111.08G)

From March 2, 2009, through March 6, 2006, the inspectors reviewed the implementation of the licensee's ISI program for monitoring degradation of the reactor coolant system, risk-significant piping and components and containment systems.

The inspections described in Sections 1R08.1 and 1R08.5 below count as one inspection sample as defined by IP 71111.08-05.

.1 Piping Systems ISI

a. Inspection Scope

The inspectors observed the following nondestructive examinations (NDE) mandated by the American Society of Mechanical Engineers (ASME) Section XI Code to evaluate compliance with the ASME Code Section XI and Section V requirements and if any indications and defects were detected, to determine if these were dispositioned in accordance with the ASME Code or an NRC-approved alternative requirement.

- Ultrasonic examination (UT) of an RHR 10" x 10" x 10" to 10" pipe (weld 1E12-0968);
- UT of standby liquid control (SLC) sweepolet to 12" pipe weld (weld 1C41-0001);
- Visual examination (VT-3) of rigid strut to SLC (strut 1C41-H5004); and
- VT-3 of rigid support to SLC (strut 1C41-H5004).

The inspectors reviewed the following volumetric examination completed since the beginning of the previous RFO with relevant/recordable conditions/indications accepted for continued service to determine if acceptance was in accordance with the ASME Code Section XI or an NRC-approved alternative.

- UT of feedwater nozzle to safe-end (weld 1B13-N4E-KB); and
- UT of low pressure core Injection nozzle to safe-end (weld 1B13-N6C-KB)

During these examinations, recordable flaws were identified which exceeded ASME Section XI Code requirements. The condition was evaluated in accordance with ASME Code.

The inspectors reviewed the following pressure boundary weld completed for risk-significant systems since the beginning of the last refuelling outage to verify that the welding and any associated NDEs were performed in accordance with the Construction Code and ASME Code, Section XI.

- weld repair/replacement of Class 2 RHR pump B min flow shutoff valve 6" piping (valve 1E12F0018B); and
- weld repair/replacement of Class 2 RHR relief valve in 2" piping (valve 1E12F0055B).

The inspectors also reviewed the welding procedure specification and supporting weld procedure qualification records for the above, to determine if the welding procedures were qualified in accordance with the requirements of the Construction Code and the ASME Code Section IX.

b. Findings

No findings of significance were identified.

.2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI-related problems entered into the licensee's CAP and conducted interviews with licensee staff to determine if:

- the licensee had established an appropriate threshold for identifying ISI-related problems;
- the licensee had performed a root cause (if applicable) and taken appropriate corrective actions; and
- the licensee had evaluated operating experience (OE) and industry generic issues related to ISI and pressure boundary integrity.

The inspectors performed these reviews to evaluate compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the attachment to this report. In addition, the inspectors verified that the licensee correctly assessed OE for applicability to the ISI group.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q)

a. Inspection Scope

On January 27, 2009, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciators;
- 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 of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

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

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

This inspection constituted one quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

Introduction: A finding of very low safety significance and associated NCV of 10 CFR 50.65(a)(1) was identified by the inspectors for the licensee's failure to implement reasonable corrective action to avoid recurring unavailability of a component. Specifically, the licensee failed to maintain a portable lube oil purifier in operation on the MFP to address a known degraded component issue and avoid unnecessary MFP unavailability time.

Description: On March 13, 2008, the licensee's expert panel review placed the MFP in 10 CFR 50.65(a)(1) status due to exceeding the maximum unavailability hours in 2007. The MFP experienced four water intrusion events affecting the lube oil system that resulted in the pump being unavailable. The licensee's root cause analysis, "Multiple Motor Feed Pump Lube Oil Water Intrusion Events," dated February 15, 2008, concluded that the MFP seal water was contacting the bearing and entering the lube oil

system. The report concluded that the most probable cause was that the current seal injection system design could not operate effectively at the condensate system pressure at which the plant was operating. The condensate system pressure had been reduced due to higher condensate flow required to support a recent power uprate and cleaning of the feedwater venturis. The expert panel established goals and a monitoring plan for the MFP that included the replacement of the MFP seal to operate at lower pressures, increased plant operator MFP lube oil sump rounds, and installation of a temporary lube oil purifier. The purifier would allow operations to take immediate action to remove water from the lube oil sump before the water caused the MFP to become unavailable, placing the plant in YELLOW PSA risk.

On March 29, 2008, the MFP experienced water intrusion into its lube oil system and became unavailable. The licensee's analysis concluded that the cause was due to the inadequate pump seal design. Following the March 29, 2008, event, the licensee permanently connected the portable purifier thereby providing continuous purification of the MFP lube oil to maintain MFP availability and meet the established performance goals.

On August 2, 2008, the portable lube oil purifier failed due to an electrical failure. Initially, the licensee expected the purifier to be restored within 2 days. It was later determined it would take more than 7 days to obtain replacement parts. A low priority was placed on repair of the purifier. The low priority caused individuals, who were aware of a readily available spare purifier on-site, to not bring the availability of the spare purifier to the organization’s attention. On August 7, 2008, the MFP lube oil sump experienced a water intrusion of about 7-gallons causing the pump to again become unavailable. Information as to the existence of the spare lube oil purifier was brought forth and the spare unit was placed in service to restore the MFP’s availability. The licensee's review of the event concluded that the water had again entered the lube oil system through the pump seal. The review further stated, in regard to the avoidable unavailability of the MFP, "that the [Senior Reactor Operator] SRO team and the management team did not recognize the importance that this temporary purifier has on the MFP lube oil system with this known seal leakage problem." The analysis concluded that if the licensee had placed a higher priority of restoring purification to the MFP lube oil sump, the spare purifier would have been placed in service and the MFP would have remained available to fulfill its intended function.

On October 14, 2008, the expert review panel determined that the two MFP unavailabilities in 2008 resulted in exceeding the MFP 10 CFR 50.65(a)(1) monitoring plan unavailability goal by 4 hours. The panel commented that the unavailability goal was established based on corrective actions to be taken to prevent recurrence and to avoid plant YELLOW PSA risk. The MFP was one of a few components with this risk profile for the Perry plant.

Analysis: The inspectors determined that the licensee's failure to implement the prescribed corrective action to address a known degraded component issue and avoid unnecessary MFP unavailability was contrary to the goal setting of Procedure PAP-1125 "Monitoring the Effectiveness of Maintenance Program Plan," and was a performance deficiency. Licensee Procedure PAP-1125, Revision 8, Section 4.10 states, "Goals are established to focus management attention on [structures, systems, components] SSC functions, which require Goal Setting. A goal should identify one or more corrective

actions that will result in restoration of the SSC function to acceptable performance or condition, and should prevent recurrence of the unacceptable performance or condition."

The finding was determined to be more than minor in accordance with IMC 0612, Power Reactor Inspection Reports, Appendix B, Issue Screening, issued on December 4, 2008, because the finding was associated with the Initiating Events cornerstone attribute of equipment performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations. Specifically, the failure to take appropriate and effective corrective actions challenged the availability of a risk-significant component with a known significant equipment problem and placed the plant in YELLOW PSA risk when the MFP became unavailable.

The inspectors performed a significance determination of this issue using IMC 0609, “Significance Determination Process,” dated August 5, 2008, and IMC 0609.04, “Initial Screening and Characterization of Findings,” dated January 10, 2008. The issue screened as a transient initiator contributor. The loss of the MFP function was determined to contribute both to a transient initiator and mitigating system and required Phase 2 screening. Phase 2 screening was conducted using IMC 0609, Appendix A, " Determining the Significance of Reactor Inspection Findings for At-Power Situations,' dated January 10, 2008, and the finding screened of very low safety significance. The primary cause of this finding has a cross-cutting aspect in the area of Problem Identification and Resolution per IMC 0305 P.1(c) because the organization failed to properly prioritize the restoration of the oil purification system.

Enforcement: Section 50.65(a)(1) of Title 10 of the *Code of Federal Regulations* requires, in part, that licensees monitor the performance or condition of SSCs within the scope of the rule as defined by 10 CFR 50.65(b), against licensee goals, in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions. Further, when the performance or condition of a SSC does not meet established goals, appropriate corrective actions shall be taken. These corrective actions should be reasonable, specify actions to achieve goals, and address the specific cause of the past performance failure.

Contrary to the above, between August 2 and August 7, 2008, the licensee failed to take appropriate and reasonable corrective actions to ensure the MFP was capable of fulfilling its intended function. Specifically, the licensee failed to install a readily available oil purification system when the installed unit was out-of-service. The failure to take reasonable, effective corrective action resulted in additional, unnecessary MFP unavailability. Because this violation was of very low safety significance and it was entered into the licensee’s CAP (CR 08–44480), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000440/2009002-01).

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:

- emergent clearance control issues associated with the fuel transfer system during the week of January 26, 2009;
- HPCS and Division 3 EDG work during the week of February 2, 2009;
- outage scaffolding construction during the week of January 26, 2009;
- shutdown defense-in-depth during the week of February 23, 2009;
- Division 2 outage protected trains during the week of March 2, 2009; and
- EH 11 bus outage during the week of March 16, 2009.

These activities were selected based on their potential risk significance relative to the reactor safety cornerstone. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(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

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- Technical Support Center ventilation and radiation protection the week of January 5, 2009;
- emergency service water (ESW) system following a suspected frazil ice blockage event during the week of January 19, 2009;
- normal intake flow path operability following automatic ESW sluice gate actuation during the week of January 26, 2009;
- RPV lifting tools issues (crane and strongback) during the week of February 23, 2009;
- RHR 'B' lineup verification and system venting during the week of March 2, 2009; and
- RPV after temperature excursion during the week of March 23, 2009.

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in

risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and Updated Safety Analysis Report (USAR) to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the temporary modifications for the following:

- Alternate decay heat removal project modifications affecting emergency core cooling system operability; and
- EDG exhaust hallway inspection modifications during the month of March.

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information, against the design basis, the UFSAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system(s). The inspectors also compared the licensee's information to operating experience information to ensure that lessons learned from other utilities had been incorporated into the licensee's decision to implement the temporary modification. The inspectors, as applicable, performed field verifications to ensure that the modifications were installed as directed; the modifications operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall plant performance. Documents reviewed in the course of this inspection are listed in the Attachment to this document.

These inspections constituted two temporary modification samples as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

.2 Permanent Plant Modifications

a. Inspection Scope

The engineering design package for the installation of the 360° Auxiliary Platform and revised up-travel stop on the refueling platform was reviewed and selected aspects were discussed with engineering personnel.

This document and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors observed ongoing and completed work activities to verify that installation was consistent with the design control documents. The modification replaced the upper refuel floor auxiliary platform with a 360° platform to provide efficiency for in-vessel inspections and the revised up-travel stop to provide clearance of fuel assemblies through the fuel transfer canal. Considerations associated with these modifications include radiation exposure to occupational workers. Documents reviewed in the course of this inspection are listed in the Attachment to this document.

This inspection constituted one permanent plant modification samples as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- rod control and information system after repair during the week of January 26, 2009
- source range monitor 'C' after replacement during the week of March 2, 2009;
- inclined fuel transfer system after repair during the week of March 2, 2009;
- ESW 'B' pipe coupling following repair during the week of March 9, 2009; and
- Division 2 EDG jacket water system following repair during the week of March 2, 2009.

These activities were selected based upon the SSC's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test

documentation was properly evaluated. The inspectors evaluated the activities against TS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted five post-maintenance testing sample as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

.1 Refueling Outage Activities

a. Inspection Scope

The inspectors reviewed the Outage Safety Plan (OSP) and contingency plans for the RFO, which commenced on February 23, 2009, to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the RFO, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below. Documents reviewed during the inspection are listed in the Attachment to this report.

- licensee configuration management, including maintenance of defense-in-depth commensurate with the OSP for key safety functions and compliance with the applicable TS when taking equipment out of service;
- implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing;
- installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error;
- controls over the status and configuration of electrical systems to ensure that TS and OSP requirements were met, and controls over switchyard activities;
- monitoring of decay heat removal processes, systems, and components;
- controls to ensure that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system;
- reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss;
- controls over activities that could affect reactivity;
- maintenance of secondary containment as required by TS;
- refueling activities, including fuel handling and sipping to detect fuel assembly leakage;
- licensee identification and resolution of problems related to RFO activities.

These inspection activities represent components of the inspection sample which will be counted at the conclusion of the RFO which was ongoing at the end of this inspection period.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control." The inspectors determined that the licensee failed to ensure all required NDE was conducted on the RPV head strongback lifting device major load-carrying welds and critical areas.

Description: On February 24, 2009, the licensee provided the inspectors with the results of NDE inspections conducted on the RPV head strongback. This was in response to an earlier NCV (05000440/2008005-01) that identified that no NDE inspections of major load-carrying welds and critical areas were being conducted on the RPV head strongback in December 2008. The licensee's commitments described in Appendix K of Supplement No. 5 to NUREG-0887, "Safety Evaluation Report Related to the Operation of Perry Nuclear Power Plant, Units 1 and 2," indicates, special lifting devices used for the movement of heavy loads shall meet the requirements stated in ANSI N14.6-1978 and is part of the licensee's test program.

Section 5.3.1. of ANSI N14.6–1978 requires that each special lifting device be subjected to either a load test or dimensional testing, visual inspection, and nondestructive testing of major load carrying welds and critical areas. The licensee did not perform a load test of the RPV head strongback prior to each use.

It was noted during the December 2008 inspection that the RPV head strongback carousel Preventative Maintenance Instruction (PMI)-0085 did not include the ANSI N14.6–1978 requirement to perform nondestructive testing of major load-carrying welds and critical areas. As a corrective action, the licensee was to perform NDE of major load-carrying welds and critical areas prior to the February 2009 RFO.

On February 25, 2009, after reviewing the NDE inspection results, the inspectors noted that the welded connection of the top side of the lifting rod to the lifting lug horizontal plate, Weld F, had not received an NDE inspection. The inspectors further noted that the licensee failed to note this discrepancy and therefore had not conducted a functionality assessment to ensure the RPV head strongback could still perform its design function.

The licensee entered this issue into their CAP and conducted a functionality assessment prior to the lift of the RPV head and planned to conduct an NDE inspection on the weld.

Analysis: The inspectors determined that the failure to perform nondestructive testing of a RPV head strongback major load carrying weld was not consistent with the ANSI N14.6-1978 requirement and was a performance deficiency.

The finding was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue and Screening," Minor Question 4 because the finding was associated with the Initiating Events cornerstone attribute of equipment performance and affected the cornerstone objective to limit the likelihood of those events that upset plant

stability and challenge critical safety functions during shutdown. Specifically, the purpose of the nondestructive testing of RPV head strongback major load carrying weld is to limit the likelihood of an RPV head strongback structural component failure, and hence, to assure safe handling of heavy loads over the reactor core or over safety-related systems.

The inspectors, with assistance from a Region III Senior Reactor Analyst (SRA), evaluated the finding using IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," because existing PRA methods and tools were not well suited for this specific issue. The Region III SRA used Table 4.1 in Appendix M to evaluate the significance of this issue. No accurate estimate of the frequency of RPV head drop events existed for this evaluation. The SRA reviewed available information documented in NUREG 0933, "Resolution of Generic Safety Issues," Issue 186. This discussed the potential risk and consequences of heavy load drops in nuclear power plants. The NUREG provided a frequency estimate of 5.6E-5 per demand for drops of very heavy loads. The estimate could be higher or lower because of varying human error rates, and because load drop events in different areas of the plant were examined. Using the value provided in the NUREG, and assuming two lifts every 18 months, the SRA estimated a frequency of a heavy load drop of 7.5E-5/yr.

A number of factors mitigated the significance of the condition including the availability of emergency core cooling systems. In addition, the licensee conducted a functionality assessment which concluded that the reactor head strongback remained capable of performing all of its design basis functions. The NRC evaluated the licensee's assessment and agreed with its conclusion. Thus, this issue is best treated as a finding of very low safety significance (Green).

The February 2009 NDE inspections of the RPV head strongback major load carrying welds and critical areas were in response to the discovery in December 2008 that the required examinations were not being conducted. The licensee failed to ensure that all major load-carrying welds and critical areas of the RPV head strongback were examined in accordance with the requirement in Section 5.3.1 of ANSI N14.6–1978. Therefore, the finding has a cross-cutting aspect in the area of problem identification and resolution as defined in IMC 0305 P.1(c), because the licensee failed to thoroughly evaluate corrective actions to ensure they appropriately addressed the identified issue.

Enforcement: Appendix B, Criterion XI of 10 CFR Part 50 states in part, a test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

Section 5.3.1, of ANSI N14.6–1978, part of the licensee's test program, requires "In cases where surface cleanliness and conditions permit, the load testing may be omitted and dimensional testing, visual inspection, and nondestructive testing of major load-carrying welds and critical areas in accordance with 5.5 of this standard shall suffice."

Contrary to the above, the licensee failed to perform NDE testing of the RPV head strongback major load-carrying welds and critical areas to ensure the ANSI N14.6–1978 requirements were met. Specifically, the licensee failed to recognize the need to

examine a structural weld, Weld F, on the strongback. Because this violation was of very low safety significance and it was entered into the licensee's CAP (CR 09–54205), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000440/2009002-02).

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:

- ESW in-service testing during the week of January 19, 2009;
- reactor coolant system (RCS) unidentified leakage sampling and isotopic analysis during the week of February 2, 2009;
- reactor pressure vessel cool down routine testing during the week of February 23, 2009;
- local leak rate testing on service air containment isolation valves (containment isolation) during the week of March 9, 2009; and
- EDG exhaust hallway routine inspection and testing during the week of March 23, 2009.

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

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

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

Documents reviewed are listed in the Attachment to this report.

This inspection constituted two routine surveillance testing samples, one in-service testing sample, one reactor coolant system leak detection inspection sample, and one containment isolation valve sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

Introduction: A finding of very low safety significance and associated non-cited violation of TS Section 5.4.1 was self-revealed when operators inadvertently isolated service air to containment affecting the main steam line plug seals while the reactor cavity was flooded for refueling operations.

Description: On March 7, 2009, Perry was in Mode 5 for refueling operations. The reactor cavity and upper pools were filled with water and main steam line plugs were installed in the reactor vessel steam line penetrations to allow maintenance on steam line components downstream of the penetrations. The main steam line plug seals were inflated and supplied by the service air system. The piping downstream of the plugs was drained in preparation for work on the main steam isolation valves.

Licensee personnel were in the process of performing a procedure to leak test containment isolation valves for the service air system. The procedure used was Surveillance Instruction (SVI)-P51-T9308, “Type C Local Leak Rate Test of 1P51 Penetration P308,” Revision 6. The procedure provided for the establishment of temporary service air jumper lines to containment so that the normal air line valves could be isolated without causing a loss of air to containment.

Operators in the field performed SVI-P51-T9308 Section 4, Prerequisites, to establish temporary air supply to containment. Operators in the field then began to perform Procedure Section 5.1, Surveillance Test, and closed the normal air supply line valves. Proper place keeping tools were used during conduct of the procedure in the field, where a procedure attachment was used. However, the test coordinator and control room personnel did not maintain the status of procedure steps that were conducted using the attachment in the field. At this time shift turnover occurred. The off-going shift personnel supervising the test were unaware that the normal air supply valves to containment were closed, and incorrectly reported to the oncoming supervisory personnel that all air line valves were open. The oncoming field operator was running

late and the off-going operator performed a turnover on the phone to the oncoming field operator. By the time the oncoming field operator assumed the shift, he also believed that all air valves were open.

After assuming the shift, licensee contract personnel noted that black hoses were used as air jumper lines. They brought this observation to the attention of licensee personnel and discussed a recollection of recent operating experience regarding an issue with degradation of black air hoses. Licensee personnel decided to inspect the jumper hoses to determine whether the hoses were in satisfactory condition.

Believing that the normal air supply lines were open, the unit supervisor gave the test personnel permission to close the jumper line valves to inspect the hoses. Licensee personnel did not verify the configuration of the normal air supply line valves before closing the temporary line valves. The action to close the temporary jumper valves effectively undid procedure SVI-P51-T9308 Section 4 test prerequisites intended to assure air to containment prior to isolating the primary air supply.

Coincident with test personnel closing the jumper valves, personnel on the refueling floor noted that steam plug seal pressure had decreased from 92 psig to 40 psig and was continuing to decrease. They reported this to the control room. The unit supervisor ordered the jumper line valves re-opened thus restoring air to the steam plug seals. The time that air had been removed from the seals was about 9 minutes.

As part of their immediate corrective action, operators performed a service air system configuration alignment and entered the issue into the CAP. Licensee personnel evaluated the event and did not find evidence that any reactor water inventory was lost due to the event.

Analysis: The inspectors determined that the failure of licensee personnel to maintain air pressure to the main steam line plug seals was a performance deficiency. The finding was determined to be more than minor in accordance with IMC 0612, Appendix B, “Issue Screening,” dated December 4, 2008. The finding was associated with the Initiating Events cornerstone attribute of configuration control and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, loss of air pressure to main steam line seals increased the likelihood of a loss of reactor water inventory event during refueling operations.

The inspectors determined that the finding could be evaluated in accordance with IMC 0609, Appendix G, “Shutdown Operations SDP,” dated February 28, 2005. The inspectors used Checklist 7 contained in Attachment 1 and determined that the finding required a Phase 2 analysis since the finding increased the likelihood of loss of RCS inventory. The inspectors reviewed Section II.B.(2) of Checklist 7 and concluded that the plant configuration used a seal which, while not a freeze seal, could have impacted RCS inventory. If the plugs were lost, water would have drained from the refueling cavity.

The Region III SRA performed the assessment using Appendix G, Attachment 3, "Phase 2 Significance Determination Process Template for BWR [boiling water reactor] during Shutdown." The SRA determined this to be a precursor to an initiating event (a loss of inventory (LOI) precursor. The plant operating state (POS) was determined to be

"POS 3" (cavity flooded). The initiating event likelihood for LOI using Table 2, "Initiating Event Likelihood (IELs) for LOI Precursors" was "4" because the time to RHR loss was greater than 2 hours, RCS level indication was functional (and therefore an accurate representation of actual level), a postulated leak could have been readily identified within half of the time to RHR loss, and a train of RHR was available on standby.

Using Appendix G, Attachment 3, Worksheet 3, "SDP Worksheet for a BWR Plant - Loss of Inventory in POS 3 (Cavity Flooded)," the analyst evaluated the remaining mitigating capability credit to reflect equipment availability and the time available to complete tasks prior to core damage. The time to core damage without injection was greater than 3 hours. The most significant core damage sequences involved loss of inventory and failure of operators to reconfigure injection paths before core damage. The combined sequences had a risk-significance of on the order of 1E-8. Therefore, the SRA determined that this issue is best characterized as a finding of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of human performance per IMC 0305 H.3(b), work control, because the licensee did not appropriately coordinate work activities involving the service air system. Specifically, personnel involved with the testing of service air containment isolation valves affecting air to the main steam line plugs conducted an inadequate shift turnover and this resulted in a loss of configuration control of the service air system.

Enforcement: Perry TS Section 5.4.1 requires that written procedures/instructions shall be established, implemented, and maintained covering the following activities including the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. The applicable Appendix A, under Administrative procedures lists procedures for Shift and Relief Turnover. Licensee procedure Normal Operating Procedure NOP-OP-1002, "Conduct of Operations," Revision 4, states in step 4.12.1, "Shift Relief and Turnovers are conducted in a manner such that the oncoming shift has accurate and detailed knowledge of current plant status, conditions and are prepared to continue safe and efficient operation of the plant." Contrary to the above, oncoming licensee personnel did not have accurate and detailed knowledge of the current status of the air supply to the main steam line plugs, an activity associated with safe operation of the facility. Because this violation was of very low safety significance and it was entered into the licensee's CAP as CR 09-54930, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000440/2009002-03).

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors reviewed licensee controls and surveys in the following radiologically significant work areas within radiation areas, high radiation areas, and airborne

radioactivity areas in the plant to determine if radiological controls including surveys, postings, and barricades were acceptable:

- drywell,
- refueling floor, and
- turbine building.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors reviewed the radiation work permits (RWPs) and work packages used to access these areas and other high radiation work areas. The inspectors assessed the work control instructions and control barriers specified by the licensee. Electronic dosimeter alarm set points for both integrated dose and dose rate were evaluated for conformity with survey indications and plant policy. The inspectors interviewed workers to verify that they were aware of the actions required if their electronic dosimeters noticeably malfunctioned or alarmed.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors walked down and surveyed (using an NRC survey meter) these areas to verify that the prescribed RWP, procedure, and engineering controls were in place; that licensee surveys and postings were complete and accurate; and that air samplers were properly located.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors reviewed RWPs for airborne radioactivity areas to verify barrier integrity and engineering controls performance (e.g., high-efficiency particulate air (HEPA) ventilation system operation) and to determine if there was a potential for individual worker internal exposures in excess of 50 millirem committed effective dose equivalent. Specifically, the inspectors reviewed the engineering controls for restoring a HEPA vacuum cleaner that was used during the spent fuel pool clean-up campaign.

Work areas having a history of, or the potential for, airborne transuranics were evaluated to verify that the licensee had considered the potential for transuranic isotopes and had provided appropriate worker protection.

This inspection constitutes one sample as defined in IP 71121.01-5.

b. Findings

Introduction: A self-revealed finding of very low safety significance and an associated NCV of 10 CFR 20.1501 (to demonstrate compliance with 10 CFR 20.1701 and 20.1702) were identified for the failure to perform an adequate evaluation to determine the use of respiratory protection equipment and/or engineering controls so as to maintain the total effective dose equivalent (TEDE) ALARA associated in restoring functionality of a HEPA vacuum cleaner.

Description: On January 17, 2008, two contracted employees alarmed the personnel contamination monitors after they opened a wet HEPA vacuum cleaner to restore the vacuum cleaner for use.

The licensee had just completed a spent fuel pool clean-up campaign. During the project demobilization, the licensee determined that the dose rates on the outside of this vacuum cleaner were elevated and that it was not worth restoring the vacuum cleaner for use. The supervisor that made this determination set the vacuum cleaner aside for future disposal as radioactive waste and left the site to assist at another plant.

Two contracted decontamination technicians reported for duty the following shift, found the vacuum cleaner and determined that it could be restored if the contents of the vacuum cleaner were emptied. Additionally, the technicians assumed that the task would be successful since the contents of the vacuum were already wet and, therefore, would not create airborne radioactivity. The technicians discussed restoration with supervision and proceeded to open the vacuum cleaner and remove the contents. Shortly after the vacuum cleaner was opened, a puff of debris was released in the breathing zone of the workers. The exact cause for this release was not determined. This unplanned puff contained airborne radioactivity that was breathed in by the workers. This material was identified when personnel contamination monitors alarmed and by subsequent whole body counters. The licensee determined that this radioactive material contributed to less than 10 mrem to each of the workers.

After the personnel contamination monitors alarmed, it became evident that the activity had not been fully evaluated and all radiological hazards had not been identified. Consequently, all required compensatory actions were not prescribed, e.g., use of respiratory protection or additional engineering controls. Additionally, during evaluation of the activity, the supervisor had not recognized that the two contracted decontamination technicians were not qualified for HEPA Vacuum maintenance and change out before the work was allowed to proceed. Furthermore, the staff failed to consider the initial supervisor's assessment and his conclusion to discard the equipment.

As immediate actions to address the radiological consequences, the licensee evaluated the internal radioactivity, assessed the dose from the radioactive material, and secured the work area to prevent future unplanned exposure.

Analysis: The inspectors determined that the licensee's failure to meet the regulatory requirement in 10 CFR 20.1501 to perform evaluation(s), necessary to demonstrate compliance with 10 CFR 20.1701 and 20.1702 for the use of respirators and/or engineering controls, was a performance deficiency. The inspectors determined that the cause of the performance deficiency was reasonably within the licensee's ability to foresee and correct. The inspectors determined that the finding was more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. Specifically, not performing evaluations to determine whether respiratory protection equipment and/or engineering controls were necessary for the work resulted in additional dose to workers. The finding was assessed using the Occupational Radiation Safety SDP and was determined to be of very low safety significance because it was not an ALARA planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised.

As described above, the supervisor had not verified the qualifications of the two contracted technicians before the activity was performed and supervisory oversight was inappropriate for the radiological hazards present. Consequently, the cause of this

deficiency had a cross-cutting aspect in the area of Human Performance per IMC 0305 H.4(c). Specifically, the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported.

Enforcement: Title 10 CFR 20.1501 requires, in part, that the licensee make or cause to be made surveys that are necessary to comply with the regulations in 10 CFR Part 20 and that are reasonable under the circumstances, to evaluate the potential radiological hazards that could be present. Pursuant to 10 CFR 20.1003, survey is defined, in part, as an evaluation of the radiological conditions and potential hazards incident to the production, use and presence of radioactive material or other sources of radiation. Title 10 CFR 20.1701 and 20.1702 requires the licensee to use engineering controls to control the concentration of radioactive material in air and/or to maintain the TEDE ALARA through the use of respiratory protection equipment or other controls.

Contrary to the above, the licensee failed to complete adequate radiological surveys on January 17, 2008, to evaluate whether engineering and/or respiratory protection equipment were necessary in returning a HEPA vacuum cleaner to service. Since the failure to comply with 10 CFR 20.1501 was of very low safety significance, immediate actions were taken to address the radiological consequences as described above, and the issue was entered into the licensee's corrective action program as CR 08-33692, the violation is being treated as a NCV consistent with Section VI.A of the NRC Enforcement Policy. (NCV 05000440/2009002-04)

.2 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed a sample of the licensee's self-assessments, audits, Licensee Event Reports (LERs), and Special Reports related to the access control program to verify that identified problems were entered into the CAP for resolution.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors reviewed corrective action reports related to access controls and any high radiation area radiological incidents (issues that did not count as performance indicator occurrences identified by the licensee in high radiation areas less than 1R/hr). Staff members were interviewed and corrective action documents were reviewed to verify that follow-up activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

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

This inspection constitutes one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified.

.3 Job-In-Progress Reviews

a. Inspection Scope

The inspectors observed the following three jobs that were being performed in radiation areas, airborne radioactivity areas, or high radiation areas for observation of work activities that presented the greatest radiological risk to workers:

- local power range monitor (LPRM) removal;
- in-vessel verification inspection (IVVI) from the 360° platform; and
- radiography in the low pressure core spray (LPCS) room.

The inspectors reviewed radiological job requirements for these activities, including RWP requirements and work procedure requirements, and attended ALARA job briefings as available.

This inspection constitutes one sample as defined in IP 71121.01-5.

Job performance was observed with respect to the radiological control requirements to assess whether radiological conditions in the work area were adequately communicated to workers through pre-job briefings and postings. The inspectors evaluated the adequacy of radiological controls, including required radiation, contamination, and airborne surveys for system breaches; radiation protection job coverage, including any applicable audio and visual surveillance for remote job coverage; and contamination controls.

This inspection constitutes one sample as defined in Inspection Procedure 71121.01-5.

b. Findings

No findings of significance were identified.

.4 Radiation Worker Performance

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation worker performance with respect to stated radiation safety work requirements. The inspectors evaluated whether workers were aware of any significant radiological conditions in their workplace, of the RWP controls and limits in place, and of the level of radiological hazards present. The inspectors also observed worker performance to determine if workers accounted for these radiological hazards.

This inspection constitutes one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified.

.5 Radiation Protection Technician Proficiency

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation protection technician performance with respect to radiation safety work requirements. The inspectors evaluated whether technicians were aware of the radiological conditions in their workplace, the RWP controls and limits in place, and if their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

This inspection constitutes one sample as defined in Inspection Procedure 71121.01-5.

b. Findings

No findings of significance were identified.

2OS2 As-Low-As-Is-Reasonably-Achievable Planning And Controls (71121.02)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed plant collective exposure history, current exposure trends, and ongoing and planned activities in order to assess current performance and exposure challenges. The inspectors reviewed the plant's current 3-year rolling average for collective exposure in order to help establish resource allocations and to provide a perspective of significance for any resulting inspection finding assessment.

This inspection constituted one required sample as defined in IP 71121.02-5.

The inspectors reviewed the outage work scheduled during the inspection period and associated work activity exposure estimates for the following work activities, which were likely to result in the highest personnel collective exposures:

- LPRM removal;
- IVVI from the 360° platform; and
- radiography in the LPCS room.

This inspection constituted one required sample as defined in IP 71121.02-5.

The inspectors reviewed documents to determine if there were site-specific trends in collective exposures and source-term measurements.

This inspection constituted one required sample as defined in IP 71121.02-5.

b. Findings

No findings of significance were identified.

.2 Radiological Work Planning

a. Inspection Scope

The inspectors evaluated the licensee's process for constructing or placing shielding in high dose rate areas. The inspectors reviewed the shielding requests initiated by the radiation protection group to evaluate the estimated dose rate reduction. The inspectors also evaluated the responses of the engineering staff to the shielding requests, as applicable.

This inspection constituted one optional sample as defined in IP 71121.02-5.

b. Findings

No findings of significance were identified.

.3 Verification of Dose Estimates and Exposure Tracking Systems

a. Inspection Scope

The inspectors reviewed the assumptions and bases for the current annual collective exposure estimate, including the applicable procedures, in order to evaluate the licensee's method for estimating work activity-specific exposures and the intended dose outcome. Dose rate and man-hour estimates were evaluated for reasonable accuracy.

This inspection constituted one required sample as defined in IP 71121.02-5.

The inspectors evaluated the licensee's exposure tracking system to determine whether the level of exposure tracking detail, exposure report timeliness, and exposure report distribution was sufficient to support control of collective exposures. The inspectors reviewed radiation work permits to determine if they covered too many work activities to allow work activity specific exposure trends to be detected and controlled. During the conduct of exposure significant work, the inspectors evaluated if licensee management was aware of the exposure status of the work and if management intervened if exposure trends increased beyond exposure estimates.

This inspection constituted one optional sample as defined in IP 71121.02-5.

b. Findings

No findings of significance were identified.

.4 Problem Identification and Resolutions

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and Special Reports related to the ALARA program since the last inspection to determine if the licensee's

overall audit program's scope and frequency for all applicable areas under the Occupational Cornerstone met the requirements of 10 CFR 20.1101(c).

This inspection constituted one required sample as defined in IP 71121.02-5.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS2 Radioactive Material Processing and Transportation (71122.02)

.1 Radioactive Waste System

a. Inspection Scope

The inspectors reviewed the liquid and solid radioactive waste (radwaste) system description in the UFSAR for information on the types and amounts of radwaste generated and disposed. The inspectors reviewed the scope of the licensee's audit program with regard to radioactive material processing and transportation programs to verify that it met the requirements of 10 CFR 20.1101(c).

This inspection constituted one sample as defined in IP 71122.02–5.

b. Findings

No findings of significance were identified.

.2 Radioactive Waste System Walkdowns

a. Inspection Scope

The inspectors performed walkdowns of the liquid and solid radwaste processing systems to verify that the systems agreed with the descriptions in the UFSAR and the Process Control Program and to assess the material condition and operability of the systems. The inspectors reviewed the status of radwaste processing equipment that was not operational and/or was abandoned in place. The inspectors reviewed the licensee's administrative and physical controls to ensure that the equipment would not contribute to an unmonitored release path or be a source of unnecessary personnel exposure.

The inspectors reviewed changes to the waste processing system to verify that the changes were reviewed and documented in accordance with 10 CFR 50.59 and to assess the impact of the changes on radiation dose to members of the public. The inspectors reviewed the current processes for transferring waste resin into shipping containers to determine if appropriate waste stream mixing and/or sampling procedures were utilized. The inspectors also reviewed the licensee's methods for waste concentration averaging to determine if representative samples of the waste product were provided for the purposes of waste classification, as required by 10 CFR 61.55.

This inspection constituted one sample as defined in IP 71122.02–5.

b. Findings

No findings of significance were identified.

.3 Waste Characterization and Classification

a. Inspection Scope

The inspectors reviewed the licensee's radiochemical sample analysis results for each of the licensee's waste streams, including dry active waste (DAW), spent resins, and filters. The inspectors also reviewed the licensee's use of scaling factors to quantify difficult-to-measure radionuclides (e.g., pure alpha or beta emitting radionuclides). The reviews were conducted to verify that the licensee's program assured compliance with 10 CFR 61.55 and 10 CFR 61.56, as required by Appendix G of 10 CFR Part 20. The inspectors also reviewed the licensee's waste characterization and classification program to ensure that the waste stream composition data accounted for changing operational parameters and thus remained valid between the annual sample analysis updates.

This inspection constituted one sample as defined in IP 71122.02–5.

b. Findings

No findings of significance were identified.

.4 Shipment Preparation and Shipment Manifests

a. Inspection Scope

The inspectors reviewed the documentation of shipment packaging, radiation surveys, package labeling and marking, vehicle inspections and placarding, emergency instructions, determination of waste classification/isotopic identification, and licensee verification of shipment readiness for five non-excepted material and radwaste shipments made in 2007 and 2008. The shipment documentation reviewed consisted of: three low specific activity (LSA), one Type A, and one Type B shipments to waste processors and burial sites.

For each shipment, the inspectors determined if the requirements of 10 CFR Parts 20 and 61 and those of the Department of Transportation (DOT) in 49 CFR Parts 170–189 were met. Specifically, records were reviewed and staff involved in shipment activities was interviewed to determine if packages were labeled and marked properly, if package and transport vehicle surveys were performed with appropriate instrumentation, if radiation survey results satisfied DOT requirements, and if the quantity and type of radionuclides in each shipment were determined accurately. The inspectors also determined whether shipment manifests were completed in accordance with DOT and NRC requirements, if they included the required emergency response information, if the recipient was authorized to receive the shipment, and if shipments were tracked as required by 10 CFR Part 20, Appendix G.

This inspection constitutes one sample as defined by IP 71122.02–5.

Selected staff involved in the preparing of DAW were observed and interviewed by the inspectors to determine if they had adequate skills to accomplish shipment related tasks and to determine if the shippers were knowledgeable of the applicable regulations to satisfy package preparation requirements for public transport with respect to NRC Bulletin 79–19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," and 49 CFR Part 172 Subpart H. Also, selected safety training and function specific training records for radiation protection technicians and environmental employees were reviewed for compliance with the hazardous material training requirements of 49 CFR 172.704.

This inspection constitutes one sample as defined by IP 71122.02–5.

b. Findings

Introduction: A self-revealed finding of very low safety significance (Green) and an associated NCV of Title 10 CFR 71.5 was identified. Specifically, the licensee failed to comply with Title 49 CFR 172.203(c) and shipped a package of radioactive material with a transport manifest that did not document all applicable hazardous substances.

Description: On February 20, 2007, the licensee shipped a container of mixed waste composed of DAW and asbestos to a waste processor with incomplete information on the transport manifest. Specifically, the transport manifest that accompanied the shipment failed to identify the asbestos content of the package. Additionally, the transport manifest indicated an incorrect package weight. Upon arrival at the waste processor's facility, the waste processor identified the asbestos in the shipping container and notified the licensee. Follow-up actions by the licensee included performing a revised radiological characterization of the shipped package. The revised radiological characterization identified negligible impact relative to the initial radiological assessment and package characterization. This event was documented in the licensee's CAP as CR 07-23098. Immediate corrective actions included providing a corrected copy of the transport manifest to the waste processor and initiating an apparent cause investigation. This was a first time evolution for the primary person (radwaste shipper) involved in this event, and the licensee's investigation determined that there was insufficient supervisory and management oversight of this work activity, given the relative inexperience of the individuals involved.

Analysis: The failure to include the complete and accurate package contents and weight on a transport manifest is a performance deficiency. The finding is more than minor because it was associated with the Public Radiation Safety cornerstone attribute of Program and Process (transportation program) and affected the cornerstone objective, in that, providing incorrect information, as part of hazard communication, could impact the actions of response personnel. The finding involved an occurrence of the licensee's radioactive material transportation program that is contrary to NRC regulations. Using the public radiation safety SDP, the inspector determined the finding had very low safety significance because: (1) radiation limits were not exceeded; (2) there was no breach of a package during transit; (3) it did not involve a certificate of compliance issue; (4) it was not a low level burial ground nonconformance; and (5) it did not involve a failure to make notifications or provide emergency information. Because the performance deficiency occurred in early 2007 and was not indicative of current performance, the inspectors did not identify any cross-cutting aspects.

Enforcement: Title 10 CFR 71.5, "Transportation of Licensed Material," requires licensees to comply with the DOT regulations in 49 CFR Parts 170 through 189 relative to the transportation of licensed material. Title 49 CFR 172.203 "Additional Description Requirements" requires that hazardous materials be listed on the transport manifest.

Contrary to the above, on February 20, 2007, the licensee failed to list asbestos, a hazardous material, on the transport manifest for a shipment also containing DAW. This violation was entered into the licensee's CAP as CR 07-23098. This issue is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000440/2009002-05, "Failure to Provide an Accurate Shipping Manifest."

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed CRs, audits and self-assessments that addressed radwaste and radioactive materials shipping program deficiencies since the last inspection to verify that the licensee had effectively implemented the CAP and that problems were identified, characterized, prioritized and corrected. The inspectors also verified that the licensee's self-assessment program was capable of identifying repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

The inspectors reviewed corrective action reports from the radioactive material and shipping programs since the previous inspection, interviewed staff and reviewed documents to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

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

This inspection constituted one sample as defined in IP 71122.02–5.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (71152)

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

.1 Routine Review of Items Entered Into the CAP

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.3 Major Equipment Reliability Program

a. Inspection Scope

During the inspection period, the inspectors reviewed the licensee's implementation of the Major Equipment Reliability Program (MERP). The licensee established this program to identify and resolve significant equipment problems that were seen as encumbering personnel and plant performance. The licensee selected numerous focus systems and components for repair, refurbishment, replacement, or upgrade. Areas of focus included, but were not limited to, large motor replacements, station air compressor replacements, online noble gas chemical treatment implementation, hydrogen water chemistry system modifications, and EDG system improvements.

The inspectors reviewed the licensee's program to determine whether the full extent of the issues were identified, appropriate evaluations were performed, and appropriate corrective actions were specified and prioritized.

b. Findings

No findings of significance were identified.

.4 CDBI Followup

a. Inspection Scope

The inspectors selected items for follow-up from issues identified during a recent NRC Component Design Basis Inspection (IR05000440/2008006). In particular, the inspector's reviewed issues associated with the licensee's evaluation of the impact of high switchyard voltage on downstream safety components, the licensee's reliance on dated testing information for motor starter operability evaluations, and whether the licensee appropriately used manufacturer's data sheets in component acceptance calculations. The inspectors reviewed the issues to determine whether the licensee appropriately identified and prioritized the issues, and whether the licensee's corrective actions were appropriate and timely in consideration of safety significance.

b. Findings

No findings of significance were identified.

.5 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of July 1, 2009, through December 31, 2009, although some examples expanded beyond those dates where the scope of the trend warranted.

The reviews also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or re-work 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 of significance were identified.

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

.1 ESW and Service Water Intake Structure Suspected Frazil Ice Event

a. Inspection Scope

On January 17, 2009, the 'A' sluice gate in the ESW pump house opened unexpectedly due to a low water level signal. The 'A' ESW pump was running at the time of the event. The opening of the sluice gate caused plant operators to question the operability of the normal intake tunnel. The sluice gates were designed to allow water intake from the service water discharge tunnel in the event that the intake tunnel was blocked. Because the pump suction was now drawing from the discharge tunnel, plant operators realigned the ESW system so that the pump discharge water flowed to the swale, an alternate discharge path. The inspectors reviewed the licensee's actions in response to the event to determine whether the actions were in accordance with TS and licensee procedures. The inspectors reviewed the licensee's communications of the event to determine whether appropriate reports were made.

b. Findings

No findings of significance were identified.

.2 Emergency Operating Procedure Entry in Association with Maintenance on HPCS System

a. Inspection Scope

On February 3, 2009, the licensee was performing planned maintenance activities on the HPCS system, specifically to perform hydro-lasing of piping connections to the suppression pool cleanup (SPCU) system to reduce radiological exposure rates. To perform the hydro-lasing on the HPCS-SPCU piping an access port (flange) had to be opened and water drained from the line. Normal system drains could not be used to drain all of the water out of the pipe. The licensee recognized that normal draining procedures would not completely drain the line and that the remaining water would drain when the line was opened. Operations had requested to be notified prior to the line being breached. The notification of the control room did not happen, apparently due to

miscommunication. When the access port (flange) was loosened, an operator who was unaware of the planned activity, witnessed water spraying into the HPCS room and informed the control room of flooding. Shortly after the notification, the control room received the HPCS room sump high level alarm. The HPCS room sump high level alarm had not been discussed earlier because a large amount of water was not expected to be drained.

Because the control room had not been informed that the maintenance activity had commenced and because they had received the sump high level alarm, the control room operators acted in accordance with their procedures and entered the Emergency Operating Procedure (EOP) for Secondary Containment Flooding; EOP-3. The operators determined the source of the water and exited EOP-3. The inspectors reviewed the licensee's actions in response to the event to determine whether the actions were in accordance with TS and licensee procedures. The inspectors reviewed the licensee's communications of the event to determine whether appropriate reports were made.

b. Findings

Introduction: A finding of very low safety significance and associated non-cited violation of TS Section 5.4.1 was self-revealed when an unexpected alarm for the HPCS pump room sump was received and water spraying was observed in the pump room during a maintenance activity that was not properly briefed.

Description: On February 3, 2009, maintenance personnel were completing draining activities in the HPCS pump room to conduct hydro-lasing activities. Maintenance personnel had failed to inform the control room operators and other licensee personnel in the work area that the work was commencing and the expected amount of water to be drained into the HPCS pump room. After breaching the system boundary, the maintenance personnel left the work area for ALARA considerations and waited by one of the pump room entrances. Licensee contract personnel, neither associated with nor knowledgeable of the evolution, entered the HPCS pump room through a second entrance and observed water spraying into the safety-related HPCS pump room. The contract personnel appropriately informed the control room operators. At almost the same time, the control room received the HPCS pump room sump high level alarm. The licensee operators, unaware that the maintenance activity had commenced, determined that the entry requirements for EOP-3, "Secondary Containment Control," had been met. Emergency Operating Procedure 3 is designed to provide guidance to the operators when there is a potential pipe break of systems required for safe shutdown of the reactor. The operators appropriately entered EOP-3 and pursued the source of the water; eventually determined to be the planned maintenance activity.

The licensee's investigation determined that, during the previous night shift, the clearance for the maintenance activity was approved. During the approval process the shift engineer and a senior reactor operator determined that the normal draining procedure would not drain the entire water volume from the pipe. It was understood that an undetermined amount of water would be discharged when the system was breached. The operators noted this on the clearance notes and operator logs. During the shift turnover, the issue of draining water upon system breach was mentioned, but no expectations or contingencies were established by the oncoming crew beyond having requested maintenance to notify the control room prior to starting the work.

Contingencies could have included holding of a pre-job brief, notification of operators of commencing the work activity, and operations personnel attending the ALARA brief to discuss actions in controlling HPCS pump room sump level.

The licensee's Normal Operating Procedure (NOP)-OP-1002, "Conduct of Operations," Revision 4, states in 4.3.2.2, "Prepare for operational evolutions to ensure that the effects of actions are understood and that abnormal conditions can be addressed." Licensee personnel failed to understand the implications to plant operations, specifically HPCS sump level, when an undetermined amount of water was to be drained when the system was breached.

Analysis: The inspectors determined that the failure to understand the consequences of draining water into the HPCS room was a performance deficiency warranting a significance evaluation in accordance with IMC 0612, Power Reactor Inspection Reports, Appendix B, Issue Screening, dated December 4, 2008. The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the initiating events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, the unexpected EOP entry could have resulted in an unplanned plant shutdown and depressurization.

The inspectors performed a significance determination of this issue using IMC 0609, “Significance Determination Process,” dated January 10, 2008, and IMC 0609.04, “Initial Screening and Characterization of Findings,” dated January 10, 2008. The issue screened as a Primary System Loss-Of-Coolant Accident (LOCA) initiator contributor. As such, the finding was of very low safety significance because under Question 1, because all mitigation equipment or functions were available. The primary cause of this finding has a cross-cutting aspect in the area of Human Performance per IMC 0305 H.3(a) because the organization failed to appropriately plan work activities that impact plant structures and systems, and failed to ensure appropriate contingencies were in place to perform a maintenance activity.

Enforcement: Perry TS Section 5.4.1 requires that written procedures/instructions be established, implemented, and maintained covering the following activities including the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. The applicable Appendix A, under Administrative procedures lists procedures for authorities and responsibilities for Safe Operation and Shutdown. Licensee procedure Normal Operating Procedure (NOP)-OP-1002, "Conduct of Operations," Revision 4, a procedure describing authorities and responsibilities for safe operation, states in step 4.3.2.2, "Prepare for operational evolutions to ensure that the effects of actions are understood and that abnormal conditions can be addressed." Contrary to the above, the licensee did not ensure that the effects of draining the HPCS line were understood and appropriately addressed. Because this violation was of very low safety significance and it was entered into the licensee’s CAP as CR 09-52989, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000440/2009002-06)

.3 Atmospheric Monitoring System (AMS)-4 Alarms On Refuel Floor

a. Inspection Scope

On January 22, 2009, licensee personnel evacuated the refuel floor in containment when an airborne particulate radiation detector alarmed. Personnel were performing work near the reactor vessel head strongback and were moving the detector at the time of the event. The inspectors reviewed the circumstances of the event and reviewed licensee response to the event. The inspectors determined whether the licensee actions were in accordance with TS and approved procedures.

b. Findings

No findings of significance were identified.

.4 Response to Cracked ESW Valve

a. Inspection Scope

On March 11, 2009, licensee personnel discovered that an ESW valve actuator body was significantly cracked and appeared to have catastrophically failed. The affected valve, 1P45-F573, was an isolation valve for emergency injection to the reactor vessel. The inspectors reviewed the circumstances of the event and reviewed licensee response to the event. The inspectors determined whether the licensee actions were in accordance with TS and approved procedures. Documents reviewed in this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 Licensee Activities and Meetings

The inspectors observed select portions of licensee activities and meetings and met with licensee personnel to discuss various topics. The activities that were sampled included:

.2 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.3 In-Process Observation of Corrective Actions Associated with the NRC's August 15, 2007, Confirmatory Order

a. Inspection Scope

By letter dated August 15, 2007, the NRC issued an immediately effective Confirmatory Order EA-07-199 (Order) that formalized commitments made by the FirstEnergy Nuclear Operating Company (FENOC). FirstEnergy Nuclear Operating Company's commitments were documented in its July 16, 2007, letter responding to the NRC's May 14, 2007, Demand for Information (DFI).

The DFI was issued in response to information provided by FENOC relative to an analysis performed by Exponent Failure Analysis Associates and Altran Solutions Corporation into the 2002 Davis-Besse reactor pressure vessel head degradation event. On June 13, 2007, FENOC provided its response to the DFI and on June 27, 2007, the NRC held a public meeting with FENOC to discuss the DFI response. On July 16, 2007, FENOC provided a supplemental response to the DFI that provided additional detail regarding the planned implementation of commitments established in the June response to the DFI.

In addition to implementing interim corrective actions, the Order required the licensee to:

- Order Item 1: Conduct regulatory sensitivity training for selected FENOC and non-FENOC FirstEnergy employees to ensure those employees identify and communicate information that has the potential for regulatory impact either at FENOC sites or within the nuclear industry to the NRC. The licensee was to provide the population to be trained, the training methodology and materials, and the training objective at least 30 days prior to conducting the training. All training was to be conducted by November 30, 2007. (Refer to inspection report (IR) 05000440/2007005);

- Order Item 2: Conduct effectiveness review to determine if an appropriate level of regulatory sensitivity was evident among FirstEnergy employees including those who received regulatory sensitivity training in January 2008 and 2009. (Refer to IR 00500440/2007005, 05000440/2008002, and 05000440/2008004 for previous effectiveness reviews);

- Order Item 3: Develop a formal process to review technical reports prepared as part of a commercial matter. The process was to be implemented no later than December 14, 2007;

- Order Item 4: Assess its Regulatory Communications Policy and make process changes to its NRC correspondence procedure to ensure specific questions are asked during the process relative to the experience gained from efforts to respond to the NRC's May 14, 2007, DFI. Revisions were to be completed by December 14, 2007;

- Order Item 5: Provide an Operating Experience (OE) document to the nuclear industry by September 15, 2007;

- Order Item 6: Complete a root cause evaluation of the events that culminated in the issuance of the May 14, 2007, DFI, and provide the NRC with a summary of the analysis no later than December 14, 2007; and

- Order Item 7: Maintain the interim corrective actions, discussed, in part, in Section II of the Order until the procedural changes described in Order Items 3 and 4 were implemented.

To assess the licensee's activities associated with the effectiveness reviews, Order Item 2, the inspectors observed the independent assessment team's activities during the week of January 19, 2009, at FirstEnergy Headquarters in Akron, Ohio. The observations included review of the standard questions being asked of FirstEnergy individuals, observations of the team members conducting interviews, and observation of the team's internal meetings assessing the results from the interviews.

In addition, the inspectors reviewed documentation referenced in the licensee's letters dated September 13, 2007, and December 31, 2007. The reviews were conducted to assess the licensee's actions associated with Order Items 3 through 6. The inspectors also discussed with the FENOC's Director – Fleet Regulatory Affairs, additional actions he had taken regarding Order Item 5, providing the industry with OE.

b. Observations and Findings

Based on the documentation reviews and observations, the inspectors concluded:

- That the licensee had met Order Item 2, to conduct an effectiveness review in 2009, to determine whether an appropriate level of regulatory sensitivity was evident among previously selected FirstEnergy employees.

  The 2009 effectiveness review was conducted by an independent team of qualified individuals. The team was comprised of three experienced individuals: an independent contractor, a manager from a non-FENOC nuclear facility, and an individual from Nuclear Energy Institute (NEI). The team conducted approximately 70 interviews covering FENOC individuals at Davis-Besse, Perry, and Beaver Valley and individuals from FirstEnergy and FENOC in Akron, Ohio.

  The questions asked of each FirstEnergy/FENOC individual interviewed were appropriate and designed to elicit the interviewee's knowledge and understanding of the material presented during the sensitivity training. The inspectors also determined that the interviews were conducted in a manner that allowed the interviewees to express their understanding of the subject matter and to provide examples of how the information affected their daily activities. The interviews were also designed to assess the level to which individuals understood the concepts discussed in the training, such as safety conscious work environment;

- That the following documents, described in FENOC's December 31, 2007, letter were consistent with the descriptions provided in the letter and addressed Order Items 3 and 4;

  Policy:
  NOPL-LP-4002, "Regulatory Communications," Rev. 1, 11/29/2007;
  NOPL-LP-4003, "Regulatory Sensitivity," Rev. 0, 11/6/2007;
  Business Practice:
  NOBP-LP-4013, "Regulatory Impact Assessment Process," Rev. 0, 11/30/2007;
  Procedure:
  NOP-LP-4007, "Regulatory Agency Communications," Rev 3, 11/30/2007;
  NOP-LP-4010, "Regulatory Sensitivity Assessment," Rev. 0, 11/14/07,
  Nuclear Operating Reference Material:
  NORM-LP-4003, "Communication References," Rev 0, 11/30/2007; and
  NORM-LP-4009, "FENOC Regulatory Interface Strategy," Rev. 0, 11/30/2007.

- That OE, provided to the industry on August 10, 2007, and to the NRC via FENOC's September 13, 2007, letter addressing Order Item 5, accurately described the events surrounding the NRC May 14, 2007, DFI including a review of technical reports prepared for commercial uses;

- That the licensee's summary of its root cause evaluation, Order Item 6, submitted to the NRC via FENOC's December 21, 2007, letter accurately portrayed the results of the full root cause evaluation; and

- That the licensee had maintained interim corrective actions until the procedural changes described in Order Items 3 and 4 were implemented.

Based on the results of this inspection and actions documented in IRs 05000440/2007005, 05000440/2008002, and 05000440/2008004, the inspectors concluded that the licensee has completed all actions required by the Confirmatory Order (EA-07-199).

These results are being documented in inspection reports for Davis-Besse (05000346/2009002), Perry (05000440/2009002) and Beaver Valley (05000334/2009002 and 05000412/2009002).

No findings of significance were identified.

.4 <u>Ineffective Corrective Actions Associated with the Motor Feedwater Pump in A(1) status.</u>

An Unresolved Item (URI 05000440/2008005-05) Unplanned Unavailability of the Motor Feedwater Pump After it was Placed in 10 CFR50.65(a)(1) Status was closed and its associated NCV is discussed in Section 1R12 of this report

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to the Site Vice President, Mr. Mark Bezilla, and other members of licensee management on April 16, 2009. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The results of the radioactive material processing and transportation program inspection with Operations Manager, Mr. D. Evans, on February 6, 2009.

- The preliminary results of the licensee's radiological environmental monitoring and radioactive material control program, and verification of the performance indicator for public radiation safety with the Site Vice President, Mr. M. Bezilla, on March 6, 2009.

- On March 6, 2009, the inspection results of the In-service Inspection (ISI) Activities were presented to the Plant Manager, Mr. K. Krueger, 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.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements, which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

Technical Specification 5.4, "Procedures," required the implementation of the applicable procedures recommended in Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, dated February 1978. Regulatory Guide 1.33, Appendix A, Part 9a, stated, "Maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances." Contrary to this requirement, on March 11, 2009, the licensee failed to adhere to procedures and performed work on the 'B' RHR system when the procedures specified work on the 'A' RHR system. The 'B' RHR system was considered available as a backup system for spent fuel pool cooling at the time of the event. The finding was determined to be of very low safety significance because the reactor vessel was defueled and the finding did not meet IMC 0609 Appendix G criteria for quantitative assessment. (CR 09-55169)

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Bezilla, Vice President Nuclear
K. Krueger, Plant General Manager
A. Cayia, Director, Performance Improvement
K. Cimorelli, Director, Maintenance
D. Evans, Manager, Operations
S. Franklin, ISI Program Owner
J. Grabner, Director, Site Engineering
E. Gordon, Radiation Protection Superintendent
H. Hanson, Jr., Director, Work and Outage Management
P. McNulty, Radiation Protection Manager
P. New, Radiation Protection
J. Pelcic, Regulatory Affairs
C. Wirtz, ISI Engineer

NRC
D. Passehl, Senior Reactor Analyst

LIST OF ITEMS OPENED, CLOSED, DISCUSSED

Opened and Closed

05000440/2009002-01	NCV	Ineffective Corrective Actions Associated with the Motor Feedwater Pump in 10 CFR 50.65(a)(1) Status (Section 1R12)
05000440/2009002-02	NCV	Inadequate Inspections on the RPV Head Strongback Lifting Device Major Load-Carrying Welds and Critical Areas (Section 1R20)
05000440/2009002-03	NCV	Loss of Service Air to Main Steam Line Plugs (Section 1R22)
05000440/2009002-04	NCV	Failure to Perform an Adequate Evaluation to Determine the Use of Respiratory Protection Equipment and/or Engineering Controls. (Section 2OS1.1)
05000440/2009002-05	NCV	Failure to Document All Applicable Hazards on Shipping Manifest. (Section 2PS2)
05000440/2009002-06	NCV	Maintenance on HPCS System resulted in Emergency Operating Procedure Entry (Section 4OA3)

Closed

05000440/2008005-05	URI	Unplanned Unavailability of the Motor Feedwater Pump After it was Placed in 10 CFR 50.65(a)(1) status. (Section 4OA5)

Discussed

05000440/2008005-01	NCV	Inspection Procedure for RPV Head Strongback Omitted Non-Destructive Testing of Structural Welds (Section 1R20)

LIST OF DOCUMENTS REVIEWED

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

1R01 Adverse Weather

NOP-WM-2001; Work Management Scheduling/Assessment/Seasonal Readiness Processes; Revision 7

1R04 Equipment Alignment

VLI-E12; Residual Heat Removal System Valve Lineup Instruction; Revision 9
OAI-0201; Operations General Instructions and Operating Practices; Revision 14
CR 07-26213; Division 1 Diesel Generator Primary Fuel Oil Transfer Pump Motor Failed; dated September 28, 2007
EQ Report Number N4446EQRWCDRO; Revision 1

1R05 Fire Protection (Annual/Quarterly)

FPI-A-A02, "Periodic Fire Inspections," Revision 5
PAP-1910, "Fire Protection Program," Revision 18
PAP-0204, "Housekeeping/Cleanliness Control Program," Revision 22

1R08 In-service Inspection Activities

CR 08-47166; Results of GEH C.S. Nozzles and Hardware; dated October 1, 2008
CR 07-20305; 1st Qtr, 2007, NRC Inspect Rpt Identifies Cross-Cutting Human Perf. Issue; dated May 10, 2007
CR 07-17232; QC ID: Freeze Seal MT/PT Acceptance Criteria in EER 600344466 and SVI-G33-T9131; dated March 30, 2007
CR 07-18329; Shroud Head Stud Assembly Modification (SHASMA) Anti-Rotation Pin Wear; dated March 12, 2007
CR 07-24035; Annual Review Expired; dated July 23, 2007
CR 07-19366; Valve Leakage Found During the Performance of ISI-E12-T1304-1; dated April 26, 2008
CR 07-18581; RFO11 IVVI Exam Found Slight Wear on Wedge Rod of Jet Pump 17; dated April 13, 2007
CR 09-54577; Emergency Service Water “B” Buried Supply Pipe; dated March 3, 2009
CR 07-17355; Control Rod Drive Mechanism A-4172 Failed PT Exam; dated March 31, 2007
WO200153520; Replace Piping Downstream of Valve 1E12F0018B; dated March 2, 2007
WO200174615; Repair/Replace Relief Valve 1E12F0055B; dated March 1, 2007
0944-09-E037; UT Calibration/Examination of Sweepolet to 12” Pipe; dated March 4, 2009
0944-09-E038; UT Calibration/Examination of Sweepolet to 12” Pipe; dated March 4, 2009
0944-09-E036; UT Calibration/Examination of 10” x 10” x 10” Tee to 10” Pipe; dated March 3, 2009
1042-09-045; Visual Examination of Rigid Strut; dated March 4, 2009
1042-09-047; Visual Examination of Rigid Guide; dated March 4, 2009

1042-09-046; Visual Examination of Rigid Support; dated March 4, 2009
96-209-09; GE Examination Summary Sheet for Weld 1B13-N6C-KB; dated February 22, 1996
73-C108; Radiographic Examination Report; dated July 11, 1975
200212499; UT of Feedwater Nozzle N4E to Safe-End; dated May 21, 2007
PAR-ACMT-049; Yoke Calibration; dated December 10, 2008
CR 08-50673; ECP 04-0293, "Replace ¾" Lift Check Valve 1E12F0550" Testing Requirements; dated December 10, 2008
INR PNPP-R11-IVVI-07-01; Indication Notification Report – Steam Generator SHSAM Retainer Pins; Revision 1
BOP-RT-08-001; Radiographic Examination of Weld 1B13-N6A-KB; dated October 5, 2008
BOP-RT-08-002; Radiographic Examination of Weld 1B13-N6C-KB; dated October 5, 2008
NDE-008; Manual Ultrasonic Examination of Ferritic Steel Piping Welds; Revision13
NQI-1042; Visual Examination; Revision 13
NQI-0942; Magnetic Particle Examination; Revision 11
GE-ADM-1062; Procedure for Determining and Documenting Examination Requirements for Risk-Informed Inservice Inspections; Revision 0
WPS 1.1.2-001; Welding Procedure Specification for GTAW/SMAW, P1 to P1 Material; Revision 11
PQR 002; Procedure Qualification Record for Welding Procedure Specification for GTAW/SMAW P1 to P1 Material; dated November 4, 1983
PQR 009; Procedure Qualification Record for Welding Procedure Specification for GTAW/SMAW P1 to P1 Material; dated November 4, 1983
NOP-CC-5709; Review and Approval of Contracted Nondestructive Examination Activities; Revision 0

1R11 Licensed Operator Requalification Program

Simulator Scenario; dated January 27, 2009

1R12 Maintenance Effectiveness

CR 09-54452; Possible Channel Bow Observed in Assembly JLF814; dated March 2, 2009
CR 09-54687; Abnormal Seating of Full Blade Guide within Reactor; dated March 4, 2009
CR 09-55614; Debris Found in Lower Tie Plate of Bundle JLF757; dated March 17, 2009
CR 09-55672; Removed Debris from Bundle 13P468 But the Debris Missed in the Catch Basin; dated March 18, 2009
CR 09-55715; Debris Found in Lower Tie Plate Bundle JLF551; dated March 18, 2009
CR 09-55870; Debris Found in Lower Tie Plate of Bundle JLF609, JLF689, And JLF593; dated March 21, 2009
CR 09-54819; Jet Pump Restrainer Bracket Wedge Wear Found RFO12 BWRVIP IVVI Exams; dated March 5, 2009
CR 09-56165; PY-PA-09-01 Evaluation Needed for Debris Impact On Reload Bundles; dated March 27, 2009

1R13 Maintenance Risk Assessments and Emergent Work Control

CR 09-52645; Work Performed without a Clearance In Place; dated January 27, 2009
PYBP-POS-2-2; Protected Equipment Postings; Revision 6
PNPP No. 10243; HPCS Outage (Yellow); Revision September 8, 2008
PNPP No. 10242; Division 3 Outage (Yellow); Revision September 8, 2008
Defense in Depth Outage Daily Review; Day 1; dated February 23, 2009

CR 09-55283; NRC Notification for Partial Loss of ERDS; dated March 13, 2009
CR 09-54704; Section of Feedwater System Not Drained Prior to Breach of System; dated March 5, 2009
PNPP No. 10203; Initial Posting for 1R12 Shutdown; Revision August 13, 2004

1R15 Operability Evaluations

CR 08-51342; Technical Support Center HVAC Failed Smoke Test; dated December 26, 2008
CR 08-51340; Technical Support Center Damper Fails to Reposition; December 26, 2008
USAR Section 12.3.31.m
PSI-0008; Determining the Availability of the Perry Plant On-site Emergency Response Facilities; Revision 2
PTI-M52-P0003; Technical Support Center Ventilation System Recirculation Mode Functional Test; Revision 1
Prompt Operability Determination Form for CR-09-52148; ESW A Sluice Gate Opened; dated January 20, 2009
Problem Solving Plan for CR-09-52148; ESW A Sluice Gate Opened; Rev. 1
Trend Data for Wind Speed, Wind Direction, Ambient Temperature, Service Water Inlet Temperature, and Service Water Discharge Temperature for January 17
Report from Underwater Marine Contractors Inc.; Perry Main Cooling Intake Tunnel Inspection Report; dated August 1, 2008
Video recorded by Underwater Marine Contractors Inc. during Sluice Gate Inspections on January 19
CR 09-52148; ESW A Sluice Gate Opened; dated January 17, 2009
CR 09-52265; Troubleshooting Activities Caused Sluice Gate to Open; dated January 19, 2009
CR 09-52453; ESW Forebay Inspection; dated January 19, 2009
CR 09-52439; Diver Inspection of ESW Forebay; dated January 24, 2009
CR 09-52915; RHR B Lineup Verification and System Venting; dated February 1, 2009
CR 09-52916; Division 2 Diesel Generator Jacket Water Leak from Left Bank Cylinder 6; dated February 1, 2009
CR 09-54923; RFO12 BWRVIP Steam Dryer Exams Found Cracked Tack Welds & Bent Guide Rod Bracket; dated March 7, 2009
CR 09-54661; Indication in Steam Dryer Lifting Bracket Weld Found by RFO12 BWRVIP IVVI Exams; dated March 4, 2009

1R18 Permanent/Temporary Modifications

Calculation 3.2.18; Revision 2
R48-7; Standby & HPCS D/G Exhaust – Removal of Raincap; Revision 1
R48-13; Setpoint Calculation for the Divisions 1-3 Diesel Generator Testable Rupture Discs;Revision 2
R48-025; Standby Diesel Generator Exhaust Back-Pressure; Revision 0
Regulatory Applicability Determination 06-03003
Operational Acceptance ECP 07-0001
CR 05-02818; RFA – ORM 6.5.4 Needs Enhancements; dated March 29, 2005
CR 06-11753; Refuel Bridge Reduced Clearance Between Fuel Bundle and Cattle Chute; dated December 21, 2006
CR 09-54577; Emergency Service Water “B” Buried Supply Pipe; dated March 3, 2009

CR05-00463; Post Accident Temperature for DG BLDG. Missile Shield Exceeds Design Spec.; dated January 18, 2005
CR05-03105; NRC ID: At Risk ECP 05-0032 Not Implemented per NOP-CC-2003; dated April 7, 2005
CR05-03126; Procedural Compliance Review for ARCS Associated with ECP 05-0032; dated April 7, 2005
CR05-03227; RFA – Perform Technical Evaluation to Support Division 2 DG Operability; dated April 12, 2005
CR05-03592; EAB Identified Calculation Issue for EDG Hallway Modification; dated April 20, 2005
CR05-03718; PY-C-05-02 D/G TRD BULDG. Exhaust Conduit Modified W/O 50.59; dated April 23, 2005
CR07-20777; Second PM Deferral for PY-1R43 (Online – Inspect EDG Hallway INSUL ASMBLY); dated May 18, 2007
CR07-29242; EDG Hallway Inspections Not Performed as Required; dated October 26, 2007
CR08-33188; Unable to Perform EDG Hallway Inspections as Written Due to Safety Issue; dated January 11, 2008
CR09-53736; EAB Failed EDG Hallway Temporary Modifications; dated February 18, 2009
CR09-55365; Minor Distortion Noted for EDG Hallway Floor Plates; dated March 13, 2009
CR09-55417; Access to Div. 3 EDG Silencer Expansion Joint Not Available; dated March 14,2009
CR09-55419; Steam Noted during Thermal Resistance Testing of EDG Hallway Const. Opening; dated March 16, 2009
CR09-55423; Identification of Loose/Galled Fasteners Found during RFO 12 EDG Hallway Inspect; dated March 14, 2009
302-0355-00000; HPCS and Standby Diesel Generator Exhaust, Intake and Crankcase; Revision W
ECR 05-0032; Engineering Change Request to Create a High Temperature Gas Insulation System for the EDG Building Tornado Missile Shield; Revision 0
ECP 08-0686-000; Temporary Modification for Blanking Off Each Division 1, 2, and 3 EDG's 30" Dia. Exhaust Piping Discharge Flanges in the EDG Hallway Structure; Revision 0
ECP 08-0686-001; Temporary Modification for Blanking Off the Div. 1 EDG Exhaust Discharge Flange in the EDG Hallway; Installed Blanking Plate on Division 1 EDG; Revision 1
ECP 08-0686-002; Remove Temporary Modification for Blanking Off the Div. 1 EDG Exhaust Discharge Flange in the EDG Hallway; Remove Blanking Plate from Division 1 EDG; Revision 0
ECP 08-0686-003; Temporary Modification for Blanking Off the Div. 2 EDG Exhaust Discharge Flange in the EDG Hallway; Installed Blanking Plate on Division 2 EDG; Revision 1
ECP 08-0686-004; Remove Temporary Modification for Blanking Off the Div. 2 EDG Exhaust Discharge Flange in the EDG Hallway; Remove Blanking Plate from Division 2 EDG; Revision 0
ECP 08-0686-005; Temporary Modification for Blanking Off the Div. 3 EDG Exhaust Discharge Flange in the EDG Hallway; Installed Blanking Plate on Division 3 EDG; Revision 1
ECP 08-0686-006; Remove Temporary Modification for Blanking Off the Div. 3 EDG Exhaust Discharge Flange in the EDG Hallway; Remove Blanking Plate from Division 3 EDG; Revision 0
ECP 09-0078-00; Revision 0
ECP 09-0078-00; Revision 1
ECP 09-0078-01; Revision 0
ECP 09-0078-01; Revision 1
ECP 09-0078-02; Revision 0

ECP 09-0078-02; Revision 1
Event Notification No. 41344; Environmental Temperature of the Tornado Missile Enclosure for the EDGs When All Three Testable Rupture Disks Open Is Expected To Exceed the Limiting Temperature for the Structural Concrete; dated January 19, 2005
WO 200155420; DG-Remove/Insp/Reinstall Expansion Joint; March 17, 2009
WO 200189235; Inspect Emergency Diesel Generator Exhaust Insulated Hallway (EIH); March 17, 2009
NOP-LP-3005; FENOC Confined Space Entry Program; Revision 05

1R19 Post-Maintenance Testing

ECP 08-0431-001; RCIS SOLA Transformer Spare in Place; dated November 18, 2008
CR 09-54162; Partially Inserted SRM C Determined to Have Torn Insulation Sock; dated February 25, 2009
CR 09-52916; Division 2 Diesel Generator Jacket Water Leak from Left Bank Cylinder 6; dated February 1, 2009
CR 09-54129; PY-SVI-F42T5254 Failed Acceptance Criteria; dated February 25, 2009
CR 09-54967; ESW Coupling Mod Determined to be a Failed Engineering Product; dated March 6, 2009
CR 09-55042; Less Than Adequate Communication During ESW B Restoration; dated March 9, 2009
CR 09-55079; ESW B Piping Backfilled Without Completion of Final Piping Coatings; dated March 10, 2009
CR 09-55091; PY-PA-09-01 10CFR50.59 Limitation Not Provided in ECP Implementation Documents; dated March 10, 2009
SVI-F42-T5254; Inclined Fuel Transfer System Access and Operability Test; Revision 10
WO 200355777; Replace SRM 'C' Detector; dated February 20, 2009
WO 200296660; Fuel Transfer Equipment; dated February 22, 2009
WO 200260347; Inclined Fuel Transfer System Access and Operability Test; dated February 25, 2009

1R20 Outage Activities

PY 1R12 Working Schedule; Shutdown Safety Layout; dated January 23, 2009
Operation Notes for RPV Level Control and Decay Heat Removal Strategies; dated January 30, 2009
CR 09-54205; RX Vessel Carousel/Strongback Weld F Received a Partial MT; dated February 25, 2009
CR 09-53957; Polar Crane Seismic Restraint Non-Conformance – Used Non-Safety Hex Nuts; dated February 22, 2009
WO 220349545; Polar Crane, Reactor Building, 125/10; dated January 15, 2009
CR 09-53772; NDE Examination Unsatisfactory (RX Servicing Equipment); dated February 18, 2009
GMI-0185; Reactor Vessel Disassembly and Assembly; Revision 12
CR 09-54425; Frame Mounted Hoist Failed Load Test per SVI-F15-T1349; dated March 1, 2009
CR 09-54356; Refuel Floor – The Swivel on the Monorail Hoist Broke; dated February 27, 2009
CR 09-54452; Possible Channel Bow Observed in Assembly JLF814; dated March 2, 2009
CR 09-54329; Containment Isolation Manual Valve 1P54-F726 Seat Leakage; dated February 27, 2009
CR 09-54147; Containment Isolation Butterfly Valve 1G41-F100 Seat Leakage; dated February 25, 2009

CR 09-54123; Request Technical Evaluation of IMI-E2-0047 (RPV level check); dated February 24, 2009
CR 09-54135; IMI-E2-47 Difficulties; dated February 25, 2009
CR 09-54025; LLRT (SVI-G43-T2002) Suspended and Cannot Be Performed Per RFO 12 Schedule; dated February 23, 2009
CR 09-54697; Compliance with SOI-F15 Precaution and Limitation 2.33; dated March 4, 2009
CR 09-54644; Replacement of Primer/Trigger Assembly for 1C41F004A; dated March 4, 2009
CR 09-54603; Potential Bowed Fuel Bundle JLF-634 From Core Location 23-02; dated March 3, 2009
CR 09-54538; Leakage Rate of 1B21F0028C Exceeds Acceptance Criteria in SVI-B21-T9000; dated February 27, 2009
CR 09-54540; Leakage Rate of 1B21F0022B Exceeds Acceptance Criteria in SVI-B21-T9000; dated February 27, 2009
CR 09-54541; 1RFO12 MSIV Testing Results; dated February 27, 2009
CR 09-54635; LPRM 08-17C Inadvertently Removed from Core; dated March 4, 2009
CR 09-54608; 1R22S0001-007 / L1007 Breaker Charging Motor Will Not Charge Springs; dated March 3, 2009
CR 09-54542; Drywell Cooling Coil Selector Valve has Large Air Leak – Impacts Drywell Pressure; dated March 3, 2009
CR 09-54531; SLC Standby Liquid Control A Temperature not Being Maintained; dated March 3, 2009
CR 09-54661; Indication in Steam Dryer Lifting Bracket Weld Found by RFO12 BWRVIP IVVI Exams; dated March 4, 2009
SOI-F15; Refueling and 360 Platforms; Revision 13
FTI-D0006; Preparation of Fuel Movement Checklist; Revision 11
FTI-D0009; Use of the Fuel Movement Checklist; Revision 12
CR 09-54716; Floor Drain at DW583 Found Intentionally Blocked; dated March 3, 2009
CR 09-54684; Request for Deviation of PAP-1910 Comp Actions for RCIC Sprinkler; dated March 4, 2009
CR 09-54666; ECP 04-0270-01 in Violation of ASME Design Specification DSP E12 and DSP-E21; dated March 4, 2009
CR 09-54828; QC ID: Weld Fit up Rejected Due to Usage on Non-safety Part; dated March 5, 2009
CR 09-54843; Pipe Base Metal Inadvertently Cut During Elbow Removal; dated March 6, 2009
CR 09-54885; Upper Fuel Bridge Encoder is Experiencing Faults Requiring Resets; dated March 6, 2009
CR 09-54927; Inboard MSIV D T(max) Stroke Time is Out of Spec High; dated March 7, 2009
CR 09-54819; Jet Pump Restrainer Bracket Wedge Wear Found RFO12 BWRVIP IVVI Exams; dated March 5, 2009
CR 09-55272; Hoses Relative to a Contaminated Area Not Secured Properly; dated March 12, 2009
CR 09-55294; Unsat Radiation Worker Practices; dated March 13, 2009
CR 09-55335; RP Survey Maps Not Updated; dated March 13, 2009
CR 09-55216; Unsat Rad Practices; dated March 12, 2009
CR 09-55268; IOI-9 / TS 3.4.11 RPV Temperature Restrictions; dated March 12, 2009
CR 09-55298; Steam Shield for 1A Heater in Low Pressure Condenser is Cracked; dated March 13, 2009
CR 09-55206; Feedwater Check Valve 1N27F0559A Failed LLRT in 1R12; dated March 10, 2009
CR 09-55301; Foreign Material Found in Low Pressure Condenser; dated March 13, 2009

CR 09-55271; Nut Washer Bolt Assembly Dropped into the Suppression Pool; dated March 12, 2009
CR 09-55466; HRA Access Control Event; dated March 15, 2009
CR 09-55369; RHR Shutdown Header Found Not Drained When Performing Pipe Cut; dated March 13, 2009
CR 09-55397; Reactor Bottom Drain Temperature Lowered to Less Than 70 F; dated March 14, 2009
CR 09-55435; Cavity Drain Down not Communicated to Radiation Protection Supervision; dated March 14, 2009
CR 09-55366; QC ID: QC Witness Point Bypassed on Div 1 Diesel ECP; dated March 13, 2009
CR 09-55283; NRC Notification For Partial Loss of ERDS; dated March 13, 2009
CR 09-55368; QC ID: Division 1 Diesel Generator Deficiencies; dated March 13 2009
CR 09-55583; PY-PA-09-01: Contractor Employee Caught Sleeping in the Plant; dated March 17, 2009
CR 09-55585; Contract Employee Disregarded Portal Monitor Alarm in PAF When Exiting the Plant; March 16, 2009
CR 09-55581; Resourced Shared Individual Entered an Unauthorized Area; dated March 17, 2009
CR 09-55625; Contractor Employee Chewing Gum in RRA; dated March 18, 2009
CR 09-55614; Debris Found in Lower Tie Plate of Bundle JLF757; dated March 17, 2009
CR 09-55567; Chemical Waste Improperly Stored in Diesel Generator Maintenance Shop; dated March 16, 2009
CR 09-55589; Engine Block Cover for Crankshaft Appears to Have Loose Bolting; dated March 17, 2009
CR 09-55514; RFO12 Eddy Current Results LP Main Condenser; dated March 16, 2009
CR 09-55515; RFO12 Eddy Current Results IP Main Condenser; dated March 16, 2009
CR 09-55516; RFO12 Eddy Current Results HP Main Condenser; dated March 16, 2009
PDB-A0019; Time-To-Core Uncovery Curves; Revision 7
CR 09-54515; Working Hour Guidelines Exceeded without Prior Approval; dated March 2, 2009
CR 09-54940; Indications Found On LP A Rotor L-1 Disc & Tie-Wire Brazes During NDE Inspection; dated March 8, 2009
CR 09-55674; Worker Struck by Lead Blanket While Hoisting to Overhead Location; dated March 18, 2009
CR 09-55609; Erosion Noted Inside Valve Body For 1E12F011A RHR A Heat Exchanger Dump Valve; dated March 18, 2009
CR 09-55854; Division 1 ATWS Inverter Output is High Out of Spec; dated March 21, 2009
CR 09-55896; QC-ID: Piping Failed Seismic Inspection; dated March 23, 2009
CR 09-55858; DW FDS Pump A Discharge Valve Failing; dated March 22, 2009
CR 09-55859; DW FDS Pump Is Operating at a Severely Reduced Capacity; dated March 22, 2009
CR 09-55938; 1R12 Loud Metallic Noise Heard in Drywell, Containment, and Refueling Floor; dated March 22, 2009
CR 09-55898; WO 200220605 1P41F0030 As-Found Condition of Valve Internals; dated March 22, 2009
CR 09-55906; MSIV 1B21-F0028C Poppet Reassembly; dated March 23, 2009
CR 09-55952; Air Actuator Failed; dated March 24, 2009
CR 09-55877; AMS-4 Alarm on the Refuel Floor During Vessel Fill; dated March 22, 2009
CR 09-56025; Air Tubing on HCU not Connected; dated March 25, 2009
CR 09-56062; Sea-Land Loaded Flatbed Truck Struck Lower Fuel Handling Building Rollup Door; dated March 25, 2009

CR 09-56122; Valtek Actuator Retaining Rings Dislodged; dated March 26, 2009
CR 09-56037; Debris Found in Lower Tie Plates of Bundles JLS227, JLS248, JLS193; dated March 24, 2009
CR 09-56165; PY-PA-09-01 Evaluation Needed For Debris Impact on Reload Bundles; dated March 27, 2009
CR 09-56169; QC ID: Inside Drywell S/R Conduit Connector, Support / Restraints Require Rework; dated March 26, 2009
CR 09-56170; QC ID: Safety Related Condulet Cover / Gasket is Missing; dated March 26, 2009
CR 09-56183; Standby Liquid Control Tank is Leaking at the Heater Flange; dated March 27, 2009
CR 09-56316; Fire Observed on 'B' Fire Computer CPU Logic Power Supply; dated March 30, 2009
CR 09-56310; Latent Design Issue with Original Seismic Qualification Documentation; dated March 30, 2009
CR 09-56285; Heavy Load Lift Conditions Need Evaluation for Common Cause; dated March 29, 2009
CR 09-56330; PY-PA-09-01 Finding: Declining Trend in Coordination and Control of Plant Evolutions; dated March 30, 2009
CR 09-55899; ODMI – Challenge to DHR by Performance of LOOP & LOOP / LOCA Testing; dated March 23, 2009
CR 09-56542; Degraded Containment Coatings Inside Drywell; dated April 2, 2009
CR 09-56551; Unable to Insert Fuel Bundle Into Core Location 25-34; dated April 2, 2009

1R22 Surveillance Testing

REC-0104; Chemistry Specifications; Revision 30
SVI-P51-T9308; Type C Local Leak Rate Test Of 1P51 Penetration P308; Revision 6
NOP-OP-1002; Conduct Of Operations; Revision 04
CR 09-54930; Inadvertent Isolation Of Service Air To Containment; dated March 7, 2009

2OS1 Access Control to Radiologically Significant Areas

NOP-OP-4702; Air Sampling; Revision 00
NOP-OP-4204; Special External Exposure Monitoring; Revision 00
NOP-OP-4601; Contamination Control Program; Revision 00
NOP-OP-4102; Radiological Posting, Markings, and Labeling; Revision 00
NOP-OP-4101; Access Control for Radiologically Controlled Areas; Revision 01
CR 09-54697; Compliance with SOI-F15 Precaution and Limitation 2.33; March 4, 2009
ECP No. 05-0186; Replacement of Auxiliary Platform IF15E005; Revision 0
SOI-F15; Refueling and 360 Platforms; Revision 13
SVI-F15-T1349; Refueling Platform Operability Test; Revision 10
ONI-D17; High Radiation Levels Within Plant; Revision 15
PDB-R0001; Operational Requirements Manual; Revision 24

2OS2 As-Low-As-Is-Reasonably-Achievable Planning and Controls

NOP-OP-4005; ALARA Program; Revision 00
RWP and Associated ALARA Files; RWP 096000; RFO-12 In-Vessel Activities; Revision 0
RWP and Associated ALARA Files; RWP 096010; RFO-12 Chem Decon Activities; Revision 0
RWP and Associated ALARA Files; RWP 096013; RFO-12 Under Vessel Activities; Revision 1

RWP and Associated ALARA Files; RWP 096017; RFO-12 Turbine Group Activities; Revision 1
RWP and Associated ALARA Files; RWP 096019; RFO-12 Refueling Activities; Revision 0
RWP and Associated ALARA Files; RWP 096021; RFO-12 Radiography Activities; Revision 0

2PS2 Radioactive Material Processing and Transportation

Title 10 CFR Part 61 Independent Laboratory Analysis; Various dates 2007 and 2008
Certificates of Training 49 CFR; Selected Personnel; Various dates
CR 07-16822; Material Receipt Survey Shows Greater than 10 percent Deviation; dated March 23, 2007
CR 07-20641; Excessive 2 Meter Dose Rates on Shielded 20' Sealand; dated May 16, 2007
CR 07-23098; Shipment Made with Incorrect Information on the Waste Manifest; dated July 5, 2007
CR 07-29014; Approximately One Inch Metal and Rubber Piece Found in Cask at Barnwell; dated October 22, 2007
CR 07-30811; TN-RAM Cask Discovered with Loose Surface Contamination during Disassembly; dated November 30, 2007
CR 08-32360; Radioactive Waste Shipment Made with Incomplete Labels; dated January 02, 2008
CR 09-53184; Infrequently Accessed Area Program Needed at Perry; dated February 6, 2009
FSAR Chapter 11.2; Liquid Radioactive Waste; Revision 12
FSAR Chapter 11.4; Solid Radioactive Waste; Revision 13
HPI-H0005; 10 CFR 61 Compliance Sampling Program; Revision 01
NOP-OP-5201; Shipment of Radioactive Material/Waste; Revision 00
NUPIC Audit 19842; dated January 28, 2008
Out of Service Radwaste Equipment Report; dated January 2009
Perry Annual Environment and Effluent Release Reports; dated 2006 and 2007
Process Control Program; Revision 10
PY-SA-08-112; Snapshot Self-Assessment; dated September 2008
RPI-1317; Radioactive Material/Waste Tracking, Disposition, and Inventory Process; Revision 03
RAD Waste Equipment Out Of Service Reports; Various dates
RAD Waste Instruction (RWI) G50; RWCU Filter/Demineralizer Backwash Receiving System; Revision 05
RAD Waste Instruction (RWI) G50; Spent Resin System; Revision 01
RAD Waste Instruction (RWI) G50; Radwaste Discharge System; Revision 08
RAD Waste Instruction (RWI) G51; Solid Radwaste Solidification System; Revision 11
Scaling Factors (10CFR61 Samples); Various Waste Streams; various dates
Shipping Record 07-1000; DAW 20' SeaVan; dated March 2008
Shipping Record 07-1005; Irradiated Hardware; dated December 2007
Shipping Record 08-1009; DAW 20' SeaVan; dated March 2008
Shipping Record 08-1021; Septa Filter Assembly; dated June 2008
Shipping Record 08-3042; Control Rod Drive Mechanisms; dated November 2008
Waste to Processors' Log; 2007 and 2008

4OA2 Identification and Resolution of Problems

CR 09-52418; Mis-position of Valves During Performance of SVI-E12T2001; dated January 22, 2009
CR 09-52373; Valve Required to Be Locked Open Found Unlocked and Open; dated January 22, 2009

CR 09-52464; MS-ID NRC Clarification Request for Scaffold; dated January 22, 2009
CR 09-51515; MS-ID Scaffold In Contact With Safety Related Tubing Support; dated January 2, 2009
CR 09-55007; NRC PI&R Inspec Rpt NCV: Scaffold Build Not In Compliance With Procedure GCI-016; dated March 9, 2009
CR 09-54635; LPRM 08-17C Inadvertently Removed From Core; dated March 4, 2009
CR 09-55625; Contractor Employee Chewing Gum in RRA; dated March 3, 2009
CR 08-40964; CDBI Concern Grid Voltage above Maximum Analyzed Limit; dated May 28, 2008
CR 08-40938; CDBI – Collective Significance – Configuration Control Issues; dated May 28, 2008
CR 08-40335; CDBI – NRC Has Noted A Discrepancy About Number of SLC Tank Mounting Bolts; dated May 28, 2008
CR 08-40693; CDBI NRC Identified - PM Testing Not Established for RPV L3 Bypass Switch; dated May 20, 2008
CR 08-38977; Pre-CDBI-Calc PSTG-0030 Adequacy for Minimum Pickup Voltages for Motor Starters; dated April 23, 2008
Calc PSTG-0030 Attachment I; Test/Analysis Request for NEMA Size 1 thru 4 Starter And/Or Contactor Coils; dated March 28, 1995
SVI-R10-T5228; On- Site Power Distribution System Verification; Revision 4
CR 09-56285; Heavy Load Lift Conditions Need Evaluated For Common Cause; dated March 29 2009
CR 09-56267; Attempt to remove A RHR Motor With Coupling Bolts Attached; dated March 28, 2009
CR 09-55345; Indications in Steam Dryer Upper Support Ring Found by RFO12 BWRVIP IVVI Exams; dated March 13, 2009

4OA3 Followup of Events and Notices of Enforcement Discretion

EP; Emergency Plan; Revision 27
EOP-3; Secondary Containment Control; Revision 4
PDB-G0001; Containment Isolation Valve Table; Revision 3
Control Room Operator Logs; dated February 3, 2009
CR 09-54930; Inadvertent Isolation of Service Air to Containment; dated March 7, 2009
CR 09-55131; Actuator Failure of 1P45F573 ESW EMG Injection to Reactor Vessel isolation; dated March 11, 2009

4OA5 Other Activities

NOPL-LP-4002, “Regulatory Communications,” Rev. 1; dated November 29 2007
NOPL-LP-4003, “Regulatory Sensitivity,” Rev. 0; dated November 6, 2007
NOBP-LP-4013, “Regulatory Impact Assessment Process,” Rev. 0dated November 30 2007
NOP-LP-4007, “Regulatory Agency Communications,” Rev 3; dated November 30, 2007
NOP-LP-4010, “Regulatory Sensitivity Assessment,” Rev. 0; dated November 14 2007
NORM-LP-4003, “Communication References,” Rev 0; dated November 30, 2007
NORM-LP-4009, “FENOC Regulatory Interface Strategy,” Rev. 0; dated November 30 2007

4OA7 Licensee-Identified Violations

CR 09-55169; Work Performed on Wrong Component/Train – Order 200296857; dated March 11, 2009

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*
CR	condition report
DAW	dry active waste
DOT	Department of Transportation
EDG	emergency diesel generator
EOP	Emergency Operating Procedure
ESW	emergency service water
FENOC	FirstEnergy Nuclear Operating Company
FSAR	Final Safety Analysis Report
HEPA	high-efficiency particulate air
HPCS	high pressure core spray
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
ISI	In-Service-Inspection
IVVI	in-vessel verification inspection
LER	Licensee Event Report
LOI	loss of inventory
LPCS	low pressure core spray
LPRM	local power range monitor
LSA	low specific activity
MERP	Major Equipment Reliability Program
MFP	motor feed pump
NCV	non-cited violation
NDE	nondestructive examination
NOP	Nuclear Operating Procedure
NRC	Nuclear Regulatory Commission
OE	Operating Experience
OSP	Outage Safety Plan
PAP	Perry Administrative Procedure
PMI	Preventative Maintenance Instruction
RADWASTE	radioactive waste
POS	plant operational state
PSA	probabilistic safety assessment
RCS	reactor coolant system
RFO	refueling outage
RHR	residual heat removal
RPV	reactor pressure vessel
RWP	radiation work permit
SDP	Significance Determination Process
SLC	standby liquid control
SRA	senior reactor analyst
SRO	senior reactor operator
SSC	structure, system and component

SVI	Surveillance Instruction
TEDE	total effective does equivalent
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
USAR	Updated Safety Analysis Report
UT	ultrasonic examination
VT	visual examination
WO	work order