



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

August 5, 2009

Mr. Jack M. Davis
Senior Vice President and
Chief Nuclear Officer
Detroit Edison Company
Fermi 2 - 210 NOC
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: FERMI POWER PLANT, UNIT 2, INTEGRATED INSPECTION
REPORT 05000341/2009-003

Dear Mr. Davis:

On June 30, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Fermi Power Plant, Unit 2. The enclosed report documents the inspection findings, which were discussed on July 7, 2009, with Mr. J. Plona and other members of your staff.

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

Based on the results of this inspection, two NRC-identified findings and one self-revealing finding of very low safety significance were identified, all of which involved violations of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating these issues as non-cited violations (NCVs) in accordance with Section VI.A.1 of the NRC Enforcement Policy. Additionally, a licensee-identified violation is listed in Section 4OA7 of this report.

If you contest the subject or severity of a Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Fermi 2 Facility. 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 the Fermi 2 Facility. The information that you provide will be considered in accordance with Inspection Manual Chapter 0305.

J. Davis

-2-

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Sincerely,

/RA/

John B. Giessner, Chief
Branch 4
Division of Reactor Projects

Docket No. 50-341
License No. NPF-43

Enclosure: Inspection Report 05000341/2009-003
w/Attachment: Supplemental Information

cc w/encl: J. Plona, Vice President,
Nuclear Generation
K. Hlavaty, Plant Manager
R. Johnson, Manager, Nuclear Licensing
D. Pettinari, Legal Department
Michigan Department of Environmental Quality
G. Williams, Director, Monroe County
Emergency Management Division
Supervisor - Electric Operators
T. Strong, State Liaison Officer
Wayne County Emergency Management Division

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SUBJECT: FERMIL POWER PLANT, UNIT 2, INTEGRATED INSPECTION
REPORT 05000341/2009/003

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-341
License No: NPF-43

Report No: 05000341/2009-003

Licensee: Detroit Edison Company

Facility: Fermi Power Plant, Unit 2

Location: Newport, MI

Dates: April 1 through June 30, 2009

Inspectors: R. Morris, Senior Resident Inspector
T. Steadham, P.E., Resident Inspector
J. Cassidy, Senior Health Physicist
J. Jacobson, Senior Reactor Inspector
J. Rutkowski, Senior Resident Inspector, Davis-Besse
F. Tran, Reactor Engineer

Observer: E. Martinez, General Engineer

Approved by: J. B. Giessner, Chief
Branch 4
Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000341/2009-003; 04/01/2009 – 06/30/2009; Fermi Power Plant, Unit 2; Outage Activities, Problem Identification and Resolution, Follow Up of Events and Notices of Enforcement Discretion.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Three Green findings were identified by the inspectors. The findings were considered Non-Cited Violations (NCVs) of NRC regulations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion V (Procedures), for the failure to follow procedures. The licensee partially dismantled a scaffold and left the remaining scaffold poles in place which was contrary to the licensee's scaffold procedure. Once identified, the licensee removed the scaffold materials and entered the issue into their corrective action program for resolution.

The finding was determined to be more than minor because if left uncorrected, it would become a more significant safety concern. Specifically, the scaffold components represented potential high energy line break induced missiles which could have damaged components that were required to remain operable to mitigate the event and, therefore, affected the Mitigating Systems Cornerstone. This finding was determined to be of very low safety significance because the phase 3 SDP estimated the change in core damage frequency due to the finding was $3.8E-7/\text{yr}$. This finding had a cross-cutting aspect in the area of human performance, work practices, because the licensee did not utilize human error prevention techniques (H.4(a)), such as self-checking and proper documentation of activities. (Section 1R20.1)

- Green. A Green self-revealing finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion VII, "Control of Purchased Material, Equipment, and Services," was identified for the failure to adequately dedicate a commercial grade item for use in a safety-related application. The vendor supplied a mismatched stem and locknut in a valve rebuild kit which was procured as a commercial grade item and dedicated by the licensee for use in a safety-related application. The valve later failed when the locknut fell off the stem which caused the system to be inoperable.

The finding was determined to be more than minor because the finding was associated with the design control attribute and affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance from a Phase 1

SDP because it only affected the loss of function of one division of non-interruptible air supply system (NIAS) for less than the Technical Specification allowed outage time. There were no cross-cutting aspects associated with this finding since the deficiency was not reflective of current licensee performance. (Section 4OA2.5)

- Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion III (Design Control), for the failure to control debris source term inside the drywell. The licensee installed ty-wraps inside the drywell as part of a design modification without performing a debris transport and loading analysis of the emergency core cooling system (ECCS) suction strainers in the torus. Once identified, the licensee performed the analysis and replaced the ty-wraps with ones of an acceptable material.

The finding was determined to be more than minor because the failure to control the debris source term inside the primary containment could lead to loss of the ECCS during an accident condition. Specifically the debris could be transported from the drywell to the torus and cause the ECCS strainers to become blocked causing degradation in the ECCS flow during the accident and, therefore, affected the Mitigating Systems Cornerstone. The finding was determined to be of very low safety significance because the engineering analysis determined the ECCS flow rates would remain above the values assumed in the safety analysis and the debris loading did not exceed the structural limits of the strainers. There were no cross-cutting aspects associated with this finding since the deficiency was not reflective of current licensee performance. (Section 4OA3.1)

B. Licensee-Identified Violations

Violations of very low safety significance or severity level IV that were identified by the licensee have been reviewed by inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Fermi Unit 2 started this inspection period in refueling outage (RF) 13 where it remained until May 1, 2009, when the reactor start-up began. Power reached 100 percent on May 2. On May 15 the power was reduced to 73 percent to perform a rod pattern adjustment and main turbine valve testing. The plant was returned to 100 percent power on May 17 and remained there until June 12 when the reactor was shut down to perform a drywell entry to repair a drywell cooler. The reactor was returned to power on June 15 and reached 100 percent on June 16 where it remained for the rest of the inspection period.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Summer Seasonal Readiness Preparations

a. Inspection Scope

The inspectors performed a review of the licensee's preparations for summer weather for selected systems, including conditions that could lead to an extended drought.

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

This inspection constituted one seasonal adverse weather sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Semi-Annual Complete System Walkdown (71111.04S)

a. Inspection Scope

During the week of April 13, 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

Field C

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 work orders (WOs) was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure 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.

.2 Quarterly Partial System Walkdowns (71111.04Q)

a. Inspection Scope

The inspectors performed a partial system walkdown of the following risk-significant system:

- high pressure coolant injection (HPCI) following turbine overhaul.

The inspectors selected this system based on its risk significance relative to the reactor safety cornerstones at the time it was inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, UFSAR, Technical Specification (TS) requirements, Administrative TSs, outstanding WOs, condition reports, 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 system 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 there were no obvious deficiencies. The inspectors also verified the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

This inspection constituted one partial system walkdown sample as defined by IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- traversing incore probe (TIP) room;
- auxiliary building, 1st floor, south cable vault;
- reactor core isolation cooling (RCIC) and Division 1 core spray pump room;
- HPCI pump room;
- Division 1 and Division 2 non-interruptible air supply (NIAS) room; and
- reactor water heat exchanger room.

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; fire detectors and sprinklers were unobstructed; transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

1R07 Annual Heat Sink Performance (71111.07)

.1 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the licensee's testing of the Division 1 RHR heat exchanger to verify that potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the

licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions. Documents reviewed for this inspection are listed in the Attachment to this document.

This annual heat sink performance inspection constituted one sample as defined in IP 71111.07-05.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08G)

From April 6 through April 9, 2009, the inspectors conducted a review of the implementation of the licensee's Inservice Inspection (ISI) Program for monitoring degradation of the reactor coolant system (RCS), risk-significant piping and components and containment systems.

The inservice inspections described in Sections 1R08.1 and 1R08.2 constituted one inspection sample as defined in IP 71111.08-05.

.1 Piping Systems Inservice Inspection

a. Inspection Scope

The inspectors observed or reviewed examination data of the following non-destructive examinations 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 of reactor vessel core spray nozzle to safe-end weld N5B (automated scan data review);
- liquid penetrant examination of standby liquid control pump suction pipe-to-coupling weld FW-C41-2979-P; and
- liquid penetrant examination of the standby liquid control pump suction valve to pipe weld FW-C41-3361-02W1.

The inspectors also reviewed portions of the following non-destructive examinations conducted as part of the licensee's industry initiative inspection program for vessel internals cracking to determine if the examination was conducted in accordance with the licensee's augmented inspection program, industry guidance documents and associated licensee examination procedures, and if any indications and defects were detected, to determine if these were dispositioned in accordance with approved procedures and NRC requirements:

- remote visual jet pump WD1-16 and sensing line JP SL-16 (video review).

The inspectors reviewed the following examinations completed during the previous outage 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:

- reactor vessel visual inspection of shroud support plate access hole cover at 0 degree location.

The inspectors reviewed the following pressure boundary welds completed for risk-significant systems since the beginning of the last refueling outage to determine if the licensee applied the preservice non-destructive examinations and acceptance criteria required by ASME Code Section XI. Additionally, the inspectors reviewed the welding procedure specification and supporting weld procedure qualification records to determine if the weld procedure was qualified in accordance with the requirements of the Construction Code and the ASME Code Section IX.

- reactor water clean up to feedwater check valve welds N21-2336-23WOAC-2 and N21-2336-0W2HC-2.

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;
- performed a root cause (if applicable) and taken appropriate corrective actions; and
- evaluated operating experience 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.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On June 2, 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 annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

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

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

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

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

- H4000, communications, (a)(1) evaluation.

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 sample as defined in IP 71111.12-05.

b. Findings

No findings of significance were identified.

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

.1 Maintenance Risk Assessments and Emergent Work Control

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 the appropriate risk assessments were performed prior to removing equipment for work:

- Division 2 shutdown cooling outage; and
- reactor water cleanup outage and turbine exhaust fan replacement.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified 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 two samples as defined in IP 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- condition and assessment resolution document (CARD) 09-23450, HPCI/RCIC Pressure Control Valve Unable to Maintain Pressure;
- CARD 09-23681, Division 2 NIAS Dryer Failure;
- CARD 09-23453, Scaffold Installed in Reactor Building Steam Tunnel;
- CARD 09-23923, Excessive Hydrogen Use; and
- CARD 09-24049, Increasing Trend in Drywell Unidentified Leakage.

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 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 UFSAR 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 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 five 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 following temporary modification:

- Temporary modification (TM) 09-0017, Isolate and Shutdown Drywell Cooler 11.

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 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 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 the

modifications were installed as directed; the modifications operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and operation of the modifications did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with operations and engineering personnel to ensure 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.

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

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- WO 26320349, Rework Valve Seat Following Local Leak Rate Test Failure;
- WO 25980121, Perform HPCI Turbine Internal Inspection;
- WO 28345932, Drain, Flush, and Refill the RCIC Turbine Lube Oil Reservoir; and
- WO P5000M023, Replace Agastat Relay P50-CR1 at P50P402B.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured 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 four post-maintenance testing samples 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 Unit 2 RFO-13, conducted March 27 through April 30, 2009, to confirm 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:

- 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 TS and OSP requirements were met, and controls over switchyard activities;
- monitoring of decay heat removal processes, systems, and components;
- controls to ensure 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 TSs;
- refueling activities, including fuel handling;
- startup and ascension to full-power operation, and tracking of startup prerequisites;
- walkdown of areas normally not accessible during power operation such as the drywell and torus (primary containment), reactor building steam tunnel, turbine building steam tunnel, and feedwater heater rooms to verify debris had not been left which could block ECCS suction strainers, and adequate material condition following all maintenance activities; and
- licensee identification and resolution of problems related to RFO activities.

Documents reviewed during the inspection are listed in the Attachment to this report.

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

b. Findings

(1) Failure to Completely Disassemble and Remove Scaffold from the Steam Tunnel

Introduction: A Green finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the failure to follow procedures. The licensee partially dismantled a scaffold and left the remaining scaffold poles in place which was contrary to the licensee's scaffold procedure.

Description: On April 30, 2009, during a closeout inspection of the reactor building steam tunnel, the inspectors identified a partially disassembled scaffold in the room. At the time, the reactor was at approximately 950 psig and operators were in the process of restarting the reactor from RFO-13. The inspectors contacted the on-duty shift manager and questioned the suitability of leaving the scaffold in place during the operating cycle.

The licensee believed engineering had previously approved leaving the scaffold in place and attempted to locate the evaluation. When the evaluation could not be located, the licensee removed the scaffold from the steam tunnel. The licensee's follow-up investigation of this issue identified that engineering had never approved the scaffold to remain in the steam tunnel during power operations. Because the steam tunnel contained several pipes classified as high energy lines (main steam line and main feedwater line), scaffold poles in the steam tunnel could have become missiles during a high energy line break (HELB) and could damaged safety-related components (the HPCI steam isolation valve, RCIC injection valve, and the TS-required steam leak detection instruments) which would have been used to mitigate the event. In addition, potential damage to the main feedwater lines could also have affected the ability of standby feedwater to mitigate the event.

The inspectors discussed this issue with the licensee. The licensee stated that to leave partial scaffold in place was a common practice due to a belief that engineering had approved leaving the scaffold in the place. Specifically, the scaffold in question was built in the steam tunnel to facilitate maintenance during outages since approximately RFO-10 (December 2004). At the end of each outage, the licensee routinely removed the deck plates, toe boards, ladder, and railings but left the remaining frame of poles and knuckles in place to save time rebuilding the scaffold at the beginning of the next outage. The inspectors reviewed licensee procedure MMA-08, "Scaffolding," Revision 12. Nothing in the procedure allowed leaving a partial dismantled scaffold in that place for an extended period of time. In addition, step 4.3.4 of the procedure required the scaffold crew to tear down and remove the entire scaffold from the area. Lastly, because the scaffold in question had been installed since at least 2004, it was considered permanent as defined in step 3.10 of MMA-08. For that, step 3.13 required a CARD to be initiated for an engineering evaluation whenever this scaffold was either modified or removed; however, no CARD was ever initiated when this scaffold was partially dismantled (i.e. modified).

Analysis: The inspectors determined that the failure to follow procedural requirements for dismantling a scaffold that could have affected safety-related equipment was contrary to regulatory requirements and was a performance deficiency.

The finding was determined to be more than minor because if left uncorrected, it would become a more significant safety concern. Specifically, the scaffold components represented potential HELB-induced missiles which could have damaged components

that were required to remain operable to mitigate the event. The inspectors therefore concluded this finding was associated with the Mitigating Systems Cornerstone.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," table 4a for the Mitigating Systems Cornerstone. The inspectors concluded this finding represented a loss of safety function for high pressure injection and contacted the regional senior risk analyst (SRA) for assistance because a HELB was not an initiating event modeled in the Phase 2 SDP worksheets.

The SRA performed a Phase 3 SDP evaluation to estimate the risk significance of the finding. Using a pipe break frequency of $1.0E-6/\text{ft-yr}$ and an estimate of approximately 380 feet of high energy piping in the steam tunnel, the initiating event frequency for a postulated HELB in the steam tunnel that can generate damaging missiles was $3.8E-4/\text{yr}$. Using the Phase 2 SDP worksheet for a Transient with the Loss of the Power Conversion System, the SRA conservatively assumed the HPCI, RCIC, and standby feedwater systems were all failed from the potential missile impact. The remaining mitigation in the worksheet was the ability to depressurize the reactor and use low pressure systems for injection. The SRA assigned a failure probability of $1.0E-3$ to these actions. The change in core damage frequency due to the finding was estimated to be $3.8E-7/\text{yr}$, which is a finding of very low safety significance (Green).

This finding had a cross-cutting aspect in the area of human performance, work practices, because the licensee did not utilize human error prevention techniques (H.4(a)), such as self-checking and proper documentation of activities. Specifically, licensee personnel failed to follow procedural requirements for dismantling a scaffold because they assumed engineering had previously approved leaving the scaffold in place but did not ensure that such an evaluation was ever performed.

Enforcement: 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Licensee procedure MMA-08 was utilized to control requesting, erection, inspection, and dismantling scaffolds that could affect safety-related structures, systems, or components. MMA-08, step 4.3.4 required that scaffolds be completely disassembled and removed from the area.

Contrary to the above, from approximately December 2, 2004, through April 30, 2009, the licensee failed to accomplish procedures by partially disassembling a scaffold in the reactor building steam tunnel that was required to be completely disassembled. Specifically, the licensee partially disassembled the scaffold at the end of each refueling outage since RFO-10. Because this violation was of very low safety significance and it was entered into the licensee's CAP as CARD 09-25109, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000341/2009003-01)

.2 Other Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for a forced outage that began on June 12, 2009 and continued through June 14, 2009. The inspectors reviewed activities to ensure the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed or reviewed the reactor shutdown and cooldown, outage equipment configuration and risk management, electrical lineups, selected clearances, control and monitoring of decay heat removal, control of containment activities, startup and heatup activities, and identification and resolution of problems associated with the outage. This outage was required to identify and correct the cause of increased unidentified drywell leakage from drywell cooler 11.

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

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

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:

- WO 25757430, Perform 46.137.002, Install Core Plate d/P for Reactor Water Level Monitoring, (routine);
- WO 25988400, Perform EDG-12 ECCS Start with Loss of Offsite Power Test, (routine);
- Procedure 43.000.005, Visual Exam During Reactor Vessel System Leakage Test, (RCS leakage);
- WO 25986712, Perform 27.129.04, Division 1 NIAS Leakage/Usage – Compressor Performance Test, (routine);
- Procedure 24.206.04, SEC-5.2 RCIC System Automatic Actuation Test, (IST)
- Procedure 24.202.01, HPCI Pump and Valve Test at 1025 psi / 24.202.03 HPCI System Piping Filled and Valve Position, (PCIV); and
- Procedure 24.000.02, Attachment 1, RCS Operational Leakage Calculation from June 7 through June 11, (RCS leakage).

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

- if preconditioning occurred;
- 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 was in accordance with TSs, the UFSAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy and applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, ASME Code, and reference values were consistent with the system design basis;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on May 19, 2009, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the control room simulator and the Technical Support Center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into

the CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

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

a. Inspection Scope

The inspectors reviewed the licensee's Occupational Exposure Control Cornerstone performance indicator (PI) to determine whether the conditions resulting in any PI occurrences had been evaluated and whether identified problems had been entered into the licensee's CAP for resolution.

This inspection constituted one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified.

.2 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;
- reactor building;
- TIP Room; and
- refuel floor.

This inspection constituted one sample as defined in IP 71121.01-05.

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 they were aware of the actions required if their electronic dosimeters noticeably malfunctioned or alarmed.

This inspection constituted one sample as defined in IP 71121.01-05.

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

This inspection constituted one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified.

.3 Job-In-Progress Reviews

a. Inspection Scope

The inspectors observed the following 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:

- TIP room fire protection surveillance;
- reactor refueling activities; and
- removal of RHR valves E11-71B and E11-72B.

The inspectors reviewed radiological job requirements for these activities, including RWP requirements and work procedure requirements.

This inspection constituted one sample as defined in IP 71121.01-05.

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 constituted one sample as defined in IP 71121.01-05.

The inspectors reviewed radiological work in high radiation work areas having significant dose rate gradients to evaluate whether the licensee adequately monitored exposure to personnel and to assess the adequacy of licensee controls. These work areas involved areas where the dose rate gradients were severe, thereby increasing the necessity of providing multiple dosimeters or enhanced job controls.

This inspection constituted one sample as defined in IP 71121.01-05.

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 constituted one sample as defined in IP 71121.01-05.

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 constituted one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified.

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

.1 Radiological Work Planning

a. Inspection Scope

The inspectors evaluated the licensee's list of work activities ranked by estimated exposure that was in progress and reviewed the following work activities of highest exposure significance:

- TIP room fire protection surveillance;
- reactor refueling activities; and
- removal of RHR valves E11-71B and E11-72B.

This inspection constituted one required sample as defined in IP 71121.02-05.

For these activities, the inspectors reviewed the as-low-as-is-reasonably-achievable (ALARA) work activity evaluations, exposure estimates, and exposure mitigation requirements in order to verify that the licensee had established procedures and engineering and work controls that were based on sound radiation protection principles in order to achieve occupational exposures that were ALARA. The inspectors also determined if the licensee had reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances.

This inspection constituted one required sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

.2 Job Site Inspections and As-Low-As-Is-Reasonably Achievable Control

a. Inspection Scope

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

- TIP room fire protection surveillance;
- reactor refueling activities; and
- removal of RHR valves E11-71B and E11-72B.

The inspectors reviewed the licensee's use of ALARA controls for the work activities. The licensee's use of engineering controls to achieve dose reductions was evaluated to verify that procedures and controls were consistent with the licensee's ALARA reviews, that sufficient shielding of radiation sources was provided, and that the dose expended to install/remove the shielding did not exceed the dose reduction benefits afforded by the shielding.

This inspection constituted one required sample as defined in IP 71121.02-05.

Job sites were observed to determine if workers used low dose waiting areas and if workers were effective in maintaining their doses ALARA by moving to the low dose waiting area when subjected to temporary work delays.

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

The inspectors attended work briefings and observed ongoing work activities to determine if workers received appropriate on-the-job supervision to ensure the ALARA requirements are met. The inspectors assessed whether the first-line job supervisor ensured that the work activity was conducted in a dose efficient manner by minimizing work crew size and by ensuring that workers were properly trained and that proper tools and equipment were available when the job started.

This inspection constituted one optional sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

.3 Source-Term Reduction and Control

a. Inspection Scope

The inspectors reviewed licensee records to evaluate the historical trends and the current status of tracked plant source terms. The inspectors determined if the licensee was making allowances and was developing contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry.

This inspection constituted one required sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

.4 Radiation Worker Performance

a. Inspection Scope

Radiation worker and radiation protection technician performance was observed during work activities being performed in radiation areas, airborne radioactivity areas, and high radiation areas that presented the greatest radiological risk to workers. The inspectors evaluated whether workers demonstrated the ALARA philosophy by being familiar with the scope of the work activity and tools to be used, by utilizing ALARA low dose waiting areas, and by complying with work activity controls. Also, radiation worker training and skill levels were reviewed to determine if they were sufficient relative to the radiological hazards and the work involved.

This inspection constituted one required sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

40A1 Performance Indicator Verification (71151)

.1 Unplanned Scrams per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7000 critical hours PI for the period from the second quarter 2008 through the first quarter 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Revision 5 of the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC inspection reports for the period of April 1, 2008, through March 31, 2009, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or

transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment.

This inspection constituted one unplanned scram per 7000 critical hours sample as defined by IP 71151.

b. Findings

No findings of significance were identified.

.2 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications PI for the period from the second quarter 2008 through the first quarter 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Revision 5 of the NEI Document 99-02 were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of April 1, 2008, through March 31, 2009, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment.

This inspection constituted one unplanned scram with complications sample as defined by IP 71151.

b. Findings

No findings of significance were identified.

.3 Unplanned Transients per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned transients per 7000 critical hours PI for the period from the second quarter 2008 through the first quarter 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports, and NRC integrated inspection reports for the period of second quarter 2008 through the first quarter 2009 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one unplanned transients per 7000 critical hours sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.4 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the Safety System Functional Failures PI for the period from the second quarter 2008 through the first quarter 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports, and NRC integrated inspection reports for the period of second quarter 2008 through the first quarter 2009 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one safety system functional failures sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.5 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS leakage PI for the period from October 2008 through March 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator logs, RCS leakage tracking data, issue reports, event reports, and NRC Integrated Inspection Reports for the period of October 2008 through ~~the~~first quarter 2009 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RCS leakage sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

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

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

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's CAP at an appropriate threshold, adequate attention was being given to timely corrective actions, and 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 occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the Attachment.

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 condition report packages.

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

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on the licensee's human performance results, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and repetitive equipment issues. The inspectors' review nominally considered the 6-month period of January 1, 2009, through June 30, 2009, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or reworks 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.

The inspectors identified a potential adverse trend with the licensee's scaffold program particularly with the implementation of the program. For example, the inspectors noted the following issues related to inadequate implementation of scaffold controls:

- temporary scaffolds installed for several cycles;
- material leaning on scaffold cages;
- scaffold laydown areas not properly evaluated or laydown areas growing larger than originally approved;
- scaffold materials remaining in place despite engineering evaluations that did not support continued installation; and
- scaffolds either too close to or touching safety-related equipment without prior engineering approval.

As a result of these issues, the licensee initiated CARD 09-25098 on June 30, 2009, because of the number of identified issues surrounding scaffold control, erection, and storage. The licensee determined that an evaluation of any commonalities needed to be performed as part of an apparent cause evaluation and will implement corrective actions as needed.

This inspection constituted one semi-annual trend inspection sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

.4 Selected Issue Follow-Up Inspection: RHR Torus Suction Valve Would Not Stroke

a. Inspection Scope

During surveillance testing on February 1, 2009, the Division 1 RHR torus suction isolation valve, E1150F004A, would not stroke properly from the control room.

Troubleshooting identified loose wires in the motor control center (MCC) bucket that caused a loss of control power to the open contactor when the open pushbutton was released because the seal-in circuit was not electrically connected to the open control circuit. Electricians secured the loose wires and inspected the other wires in the bucket for similar conditions. No other abnormalities were identified. Post-maintenance testing was satisfactorily completed and the valve was returned to service the following day. The licensee entered this issue into their CAP as CARD 09-20637 and completed an apparent cause evaluation.

The inspectors reviewed the events and circumstances surrounding this failure, the completed apparent cause evaluation, maintenance and CARD history on the MCC bucket and valve, and CARD searches on other instances of loose wires or electrical terminations. The inspectors reviewed these documents to determine if prior opportunities for discovery existed and if the proper electrical components were utilized. The inspectors reviewed the licensee's apparent cause evaluation to ensure it was performed to a level of detail commensurate with the significance of the issue, and corrective actions addressed the identified causes, and the extent of cause was adequate. The inspectors ensured the licensee entered and followed the appropriate TS Limiting Condition for Operation (LCO) action statements and operator actions were in accordance with licensee procedures and standards.

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

b. Findings

One licensee-identified finding is documented in Section 4OA7 of this report.

.5 Selected Issue Follow-Up Inspection: CARD 09-23681, Non-Interruptible Air Supply (NIAS) Shuttle Valve Failure

a. Inspection Scope

The inspectors reviewed the events and circumstances surrounding the Division 2 NIAS air dryer failure on May 7, 2009, the completed apparent cause evaluation, and related maintenance and CARD history. The inspectors reviewed these documents to determine if prior opportunities for discovery existed and if deficiencies existed with the licensee's procurement process. The inspectors reviewed the licensee's apparent cause evaluation to ensure it was performed to a level of detail commensurate with the significance of the issue, corrective actions addressed the identified causes, and the extent of cause was adequate. The inspectors ensured the licensee entered and followed the appropriate TS LCO action statements and operator actions were in accordance with licensee procedures and standards.

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

b. Findings

Introduction: A Green self-revealing finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion VII, "Control of Purchased Material, Equipment, and Services," for the failure to adequately dedicate a commercial grade item for use in a safety-related application was identified. The vendor supplied a

mismatched stem and locknut in a valve rebuild kit which was procured as a commercial grade item and dedicated by the licensee for use in a safety-related application. The valve later failed when the locknut fell off the stem which caused the associated system to be inoperable.

Description: On May 7, 2009, the Division 2 control air system trouble alarm annunciated multiple times in the main control room. Initial troubleshooting identified a failed shuttle valve that controlled the dryer exhaust vent during the regeneration cycle of one of the two towers for the air dryer. Operators declared the Division 2 NIAS system inoperable. Troubleshooting identified a failed locknut on the poppet assembly for the shuttle valve. Licensee formed an emergent issues team, entered this issue into their CAP as CARD 09-23681, and performed an apparent cause evaluation of this issue. The valve was successfully rebuilt and the system was restored to service prior to the expiration of the TS allowed outage time. Division 1 NIAS remained operable during this time.

The inspectors interviewed personnel who repaired the failed valve as well as other personnel who had performed similar valve rebuilds in the past. The inspectors learned that the rebuild kits and valves were procured as commercial grade items and that the licensee used their commercial grade dedication program to dedicate the parts for safety-related applications. The inspectors further learned that the valve vendor had previously used nylon locknuts but started using Flexloc full height slotted hex head locknuts since about 2006 because of problems with the nylock nuts backing off. Additionally, the vendor also modified the valve shaft to accommodate the new Flexloc locknuts being supplied.

Upon closer examination of the failed valve, the licensee discovered that the stem was of the old configuration that was designed to be used with a nylon locknut; however, the licensee installed a Flexloc locknut when technicians last rebuilt the valve. The inspectors questioned why the licensee's commercial grade dedication program did not identify the mismatched stem and locknut that ultimately contributed to the failure on May 7, 2009. The inspectors reviewed procurement and commercial grade dedication documents and learned that the licensee's receipt inspection for these rebuild kits did not check to ensure that the correct locknut and stem was received. Additionally, the licensee did not ensure that the locknut sufficiently locked to the stem such that it would not back out. The licensee modified the receipt instructions for these rebuild kits to ensure the correct stem and locknuts would be received with each rebuild kit, incorporated torque requirements for the locknut, and modified the applicable maintenance procedure to require staking the threads to further prevent the locknut from loosening.

Analysis: The inspectors determined that the failure to adequately dedicate a commercial grade item for use in a safety-related application was contrary to regulatory requirements and was a performance deficiency.

The finding was determined to be more than minor because the finding was associated with the design control attribute and affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding caused the inoperability of a safety-related system.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 -

Initial Screening and Characterization of Findings,” table 4a for the Mitigating Systems Cornerstone. The inspectors concluded this finding screened as Green because it only affected the loss of function of one division of NIAS for less than the TS allowed outage time.

The inspectors concluded there was no cross-cutting aspect to this finding because the failure to establish an appropriate receipt instructions for these rebuild kits occurred in the early 1990s and did not reflect current licensee performance.

Enforcement: 10 CFR Part 50, Appendix B, Criterion VII, “Control of Purchased Material, Equipment, and Services,” requires, in part, that measures be established to include provisions, as appropriate, to ensure the quality of equipment furnished by contractors.

Contrary to the above, in December 2009, the licensee failed to ensure the quality of equipment furnished by contractors for use in a safety-related application. Specifically, the licensee did not ensure the correct stem and locknut were supplied in a valve rebuild kit that was used to rebuild a shuttle valve on the Division 2 NIAS air dryer. Because this violation was of very low safety significance and it was entered into the licensee’s CAP as CARD 09-23681, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000341/2009003-02)

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

.1 Non-Qualified Ty-Wraps Inside Primary Containment

a. Inspection Scope

The inspectors reviewed the results of EFA-07-005, Engineering Functional Analysis of Non-Qualified Ty-Wraps Inside Primary Containment, as a follow-up to Unresolved Item (URI) 2007006-07. The inspectors reviewed the EFA to evaluate past operability by assessing whether the use of non-qualified Tefzel ty-wraps inside primary containment could have plugged the ECCS strainers.

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

b. Findings

Introduction: The inspectors identified a Green finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III, “Design Control,” for the failure to adequately control materials in primary containment. This inspection was initiated during RF12 in 2007 when the inspectors opened URI 05000341/2007006-07.

Description: As described in inspection report 05000341/2007006, the inspectors identified an abundance of ty-wraps inside primary containment during a routine walkdown and questioned the licensee about their tracking program for items that could become debris in the torus and potentially block the ECCS and RCIC pump suction. The licensee stated the design specification did not cover the use of ty-wraps in the drywell. Upon further investigation, the licensee identified that the lead shielding installed during a previous outage had also not been considered in the design specification. The inspectors reviewed specification 3071-389, Revision 3, “Emergency Core Cooling System Suction Strainers,” and noted that ty-wraps were not addressed in the specification. When questioned by the inspectors, the licensee stated the only

program in place was to track paint in the drywell and torus. Upon further inspection the licensee noted shield blankets had been installed in the drywell without modeling the debris loading on the strainers since approximately RF02.

The licensee worked with several vendors to analyze the effects of the ty-wraps and lead shielding on ECCS and RCIC flow which included both a debris transport and strainer flow analysis. The results of the analyses indicated that although the available margins were reduced as a result of the identified debris, adequate NPSH remained available to all potentially affected pumps. Additionally, the increased strainer loading remained within the structural limitations of the potentially affected strainers. The licensee removed or replaced the unqualified ty-wraps with qualified ty-wraps and removed the shield blankets at the end of the 2009 outage. Lastly, the licensee established a program for control of materials inside containment.

Analysis: The inspectors determined that the failure to adequately control materials in primary containment was contrary to regulatory requirements and was a performance deficiency.

The finding was determined to be more than minor because failure to control materials inside the primary containment could lead to loss of ECCS during an accident condition (a more significant safety concern). Specifically the materials could be transported from the drywell to the torus, block the ECCS strainers, and degrade in the ECCS flow during the accident. The inspectors concluded this finding was associated with the Mitigating Systems Cornerstone.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," table 4a for the Mitigating Systems Cornerstone. Because the inspectors concluded that this finding was a design deficiency confirmed not to result in loss of operability, this finding is of low safety significance (Green). The inspectors concluded that there was no cross cutting aspect to this finding because the failure to establish a program to adequately control materials in primary containment occurred prior to 2007 and did not reflect current licensee performance.

Enforcement: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related function of structures, systems, and components.

Contrary to the above, during RF-12 on October 26, 2007, the licensee failed to select a suitable material for the ty-wraps used inside containment. Specifically, ty-wraps were installed inside the primary containment that could have contributed to the blockage of the ECCS strainers during an accident condition. Because this violation was of very low safety significance and it was entered into the licensee's CAP as CARD 07-26974, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. URI 05000341/2007006-07, Non-Qualified Ty-Wraps Inside Primary Containment, is closed. (NCV 05000341/2009003-03)

.2 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure 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 inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.3 Closure of LER 08-005, Loss of High Pressure Coolant Injection System Safety Function Due to Closure of Steam Supply Valve

On December 4, 2008, during a routine surveillance test, the HPCI steam supply outboard isolation valve bypass valve, E4150F600, position indication lights did not function as expected. Upon discovery of the problem, Operations determined the ability of the E4150F600 valve to close on a containment isolation signal was unreliable, and declared the valve inoperable. Containment Isolation LCO 3.6.1.3, Condition A, was entered for the E4150F600 valve, and the required action to isolate the penetration within four hours was completed which rendered the HPCI system inoperable and unable to perform its intended safety function. A 14-day LCO was entered at that time for an inoperable HPCI system per LCO 3.5.1.

Troubleshooting determined the cause of the event was attributed to degraded contacts in a control relay. The licensee replaced the relay and completed all necessary post-maintenance testing, operators then opened the HPCI steam supply isolation valve and returned the system to service on December 6, 2008. The safety consequences of this event were evaluated using the Probabilistic Safety Analysis Model and determined to be very low. The licensee entered the failure of the valve in the CAP as CARD 08-28129 and performed an apparent cause evaluation. The inspectors reviewed the apparent cause evaluation and determined the cause of the relay failure was not a result of a licensee performance deficiency. The inspectors reviewed the LER, no findings of significance were identified and no violation of NRC requirements occurred. This LER is closed.

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

.4 Closure of LER 09-001, Manual Reactor Scram in Response to High Turbine Vibration

On March 28, 2009, Operators placed the reactor mode switch to shutdown when vibration levels on bearing number 1 reached 15 mils. Operators were in the process of reducing power in preparation for a planned unit shutdown for RFO-13. The plant responded as designed as a result of the manual scram. The licensee determined that high turbine vibration was due to a High Pressure Turbine rub transversing bearing number 1. Cooling of the moisture separator reheaters occurred early in the shutdown process, and it was determined the rub was due to the reheater cooldown process. The

licensee entered the issue into their CAP as CARD 09-21910 and performed an apparent cause evaluation. The inspectors reviewed the apparent cause evaluation and determined the high vibrations were not the result of a licensee performance deficiency. The inspectors reviewed the LER, no findings of significance were identified and no violation of NRC requirements occurred. This LER is closed.

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

40A6 Management Meetings

.1 Exit Meeting Summary

On July 7, 2009, the inspectors presented the inspection results to Mr. J. Plona 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. The inspectors conducted an additional exit meeting on July 17, 2009, with Mr. R. Johnson and other members of the licensee staff to discuss changes in the characterization of certain issues presented on July 7, 2009.

.2 Interim Exit Meetings

Interim exit meetings were conducted for:

- the results of the inservice inspection with the Site Vice-President, Mr. J. Plona, and other members of the licensee staff on April 9, 2009; and
- the results of the access control to radiologically significant areas and ALARA inspection with the Plant Manager, Mr. K. Hlavaty, on April 10, 2009.

The inspectors confirmed that none of the potential report input discussed was considered proprietary.

40A7 Licensee-Identified Violation

The following violation of very low 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.

- As described in Section 40A2.3 of this report, during routine surveillance testing on February 1, 2009, the Division 1 RHR torus suction isolation valve, E1150F004A, would not stroke properly from the control room. Troubleshooting identified loose wires in the MCC bucket that were the cause of the failure. The licensee secured the loose wires, ensured there were no additional loose wires, completed a stroke test of the valve, and returned it to service the following day. The licensee entered this issue into their CAP as CARD 09-20637 and completed an apparent cause evaluation. The licensee concluded that the wires most likely came loose during previous diagnostic testing post-maintenance activities which did not incorporate steps to ensure that leads disturbed during the test were tight prior to closing out the MCC bucket. The licensee revised the applicable maintenance procedure to include such an inspection. 10 CFR 50, Appendix B, Criterion V requires, in part, that activities affecting quality be properly preplanned and performed in accordance with procedures appropriate to the circumstances. Contrary to the above, licensee procedure 35.306.009 was not appropriate to the circumstances because it did not ensure that potentially

disturbed leads were tight and secure following maintenance. The licensee entered this issue into their CAP as CARD 09-20637. This issue screened as Green because there was no loss of safety function.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Plona, Site Vice-President
K. Hlavaty, Plant Manager
M. Brooks, ISI Program Manager
M. Caragher, Director, Engineering
W. Colonnello, Director, Nuclear Support
T. Dong, Performance Engineering Manager
R. Hambleton, RVIM Program Manager
M. Lawson, Radiation Protection Manager
R. Salmon, Licensing Engineer
Larry Schuster, Director, Nuclear Corporate Services
C. Walker, Director, Organizational Effectiveness

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened & Closed

05000341/2009003-01	NCV	Failure to Completely Disassemble and Remove Scaffold from the Steam Tunnel (Section 1R20.1)
05000341/2009003-02	NCV	Failure to Adequately Dedicate a Commercial Grade Item for Safety Related Use (Section 4OA2.5)
05000341/2009003-03	NCV	Failure to Adequately Control Potential Debris Source Term in Primary Containment (Section 4OA3.1)

Field C

Closed

05000341/2007006-07	URI	Non-Qualified Ty-Wraps Inside Primary Containment (Section 4OA3.1)
LER 08-005	LER	Loss of High Pressure Coolant Injection System Safety Function Due to Closure of Steam Supply Valve
LER 09-001	LER	Manual Reactor Scram in Response to High Turbine Vibration

Field C

Discussed

None

LIST OF DOCUMENTS REVIEWED

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

Section 1R01 – Adverse Weather Protection

- 2009 Hot Weather Preparations: Job Status as of May 20, 2009
- CARD 09-23891, V4100F001 Linkage Found Disconnected
- CARD 09-22787, Maintenance Support Required for Inspection of This Damper
- Drawing 6I721-2611-07, Schematic Diagram Reactor Building Exhaust Fan West T4100C006
- Drawing 6I721-2611-08, Schematic Diagram Reactor Building Exhaust Fans, Auxiliary Relays, and Recirculation Air Control
- Drawing 6M721-2707, Flow Diagram Reactor and Auxiliary Building Ventilation System
- Procedure 27.000.06, Hot Weather Operations, Revision 2

Section 1R04 – Equipment Alignment

- CARD 09-23450; E41F011 HPCI/RCIC Isolation/PCV Unable to Maintain Pressure
- Design Basic Document E41-00; High Pressure Coolant Injection System, Revision E
- Drawing 6M721-2035, Diagram High Pressure Coolant Injection System (HPCI) Reactor Bldg, Revision BH
- Drawing 6M721-2006, Condensate Storage and Transfer System Diagram, Revision BD
- Drawing 6M721-2043, Diagram High Press Coolant Injection Sys Barometric CNDR (HPCI) Reactor Building, Revision AG
- Procedure 23.202, High Pressure Coolant Injection System, Revision 96

Section 1R05 – Fire Protection

- CARD 08-21932, Broken Conduit E4100F005
- CARD 09-22879, Floor Penetration E-8617 & E-8618 Were Not Sealed per I-RID 71423
- CARD 09-22424, Condulet Plug not Installed, 4/8/2009
- Design Basis P80-00/P82-00; Fire Protection / Detection System; Revision C
- Drawing 6M721-5733-1; Fire Protection Functional Operations Sketch; Revision AW UFSAR Section 9A.4: Fire Hazards Analysis, Revision 326
- Procedure 20.000.22, Plant Fires, Revision 38
- Procedure 28.507.04, Test and Inspection of Fire Dampers, Revision 8
- Procedure 28.502.02, CO2 System Valve Lineup Verification, Revision 6
- TE-T22-09-035, Evaluation of the Effects of the Open Condulet Plug on Fire Resistance, 4/10/2009
- USFAR Figure 9A-3, Fire Protection Evaluation Reactor and Auxiliary Buildings Basement Plan, Revision 12, 11/2003
- USFAR Figure 9A-2, Fire Protection Evaluation Reactor Building Sub-Basement Plan, Revision 12, 11/2003

Section 1R07 – Annual Heat Sink Performance

- Heat Exchanger Inspection Report; RHR Division 1 Heat Exchanger; 03/29/2009

Section 1R08 Inservice Inspection

- 39.NDE.11; ASME / ANSI Radiographic Examination; Revision 4
- 54-ISI-857; Automated Ultrasonic Examination of Similiar Metal Piping Welds; Revision 2
- CARD 07-26611; Linear Indications Identified in Access Hole Cover Ring Adjacent to Ring; 10/24/2007
- CARD 09-22295; First Hole for 0 Degree Access Hole Cover Clamp Off Position; 04/05/2009
- Code Data Form NIS-2; Replace RHR Pump Discharge Check Valve N5-0307; 05/03/2006
- Code Data Form NIS-2; Replace Check Valve G3300F120 N5- 0214; 01/17/2008
- EDP 35798; Modify Zero Degree Azimuth Reactor Vessel Internal Access Hole Cover; Revision A
- GE-NE-0000-0076-6420; Final Report – Access Hole Cover – Top Hat Design Weld Flaw Evaluation; Revision 0
- Liquid Penetrant Reports RFO 13-39 and 13-40; 04/07/2009
- Procedure 43.000.017; Reactor Vessel – In-vessel / Internals Inspection; Revision 20
- Radiographs for welds N21-2336-23WOAC-2 and N21-2336-0W2HC-2
- Remote Visual Examination of JP 16 (Video)
- Remote visual Examination of P2 Weld Cover Plate to Core Spray “T Box” 120 degrees (Video)
- Ultrasonic Report and Data RFO 13-04; 04/07/2009
- Weld Procedure Specification A11-3.7 CH; Revision 1
- WO Z033471; Cut Out and Replace Valve G3300F120 (RWCU to Feedwater Check Valve
- WR Z043607; Residual Heat Removal Pump “A” Discharge Check Valve

Section 1R11 – Licensed Operator Regualification Program

- Fermi 2 Evaluation Scenario SS-OP-904-1080; BPV Failure/Loss of FW/Drywell Leak/ED; Revision 0

Section 1R12 – Maintenance Effectiveness

- Apparent Cause Evaluation; CARD 09-21426, System H40 Exceeds Maintenance Rule Performance Criteria; 04/09/2009
- CARD 08-25058-01; Complete MRFF Review and attach copy; 08/08/2008
- CARD 08-25058-06; Obtain Funds to Repair the Public Address Systems in the NOC / NTC; 10/16/2008
- CARD 08-25058-10; Investigate and Repair Plant Page System Components; 01/21/2009
- CARD 09-20001; Potential Safety Concern – Deteriorated Condition of Plant Page System and Lack of Equipment Labeling; 01/01/2009
- CARD 09-20364; Evaluate System H4000 “Communications” for (a)(1) Under the Maintenance Rule; 01/20/2009
- CARD 09-20364-01; Develop a System Health Plan / Program for the HiCom System; 02/19/2009
- CARD 09-21426; System H40 Exceeds Maintenance Rule Performance Criteria; 03/06/2009

Section 1R13 – Maintenance Risk Assessments and Emergent Work Control

- Actual Risk Profile Summary; Week of 03/23/2009
- Actual Risk Profile Summary; Week of 06/01/2009
- CARD 09-24210; Trip of North TBHVAC Exhaust Fan; 05/31/2009
- Scheduled Risk Profile Summary (Week of 06/08/2009)

Section 1R15 – Operability Evaluations

- CARD 07-10858; Commercial Grade Dedication Process Weaknesses, 11/18/1997
- CARD 09-21215; Failed PMT – Div 1 NIAS Dryer, 02/25/2009
- CARD 09-21221; Poppet Assembly Not Installed in Division 1 NIAS Dryer; 02/26/2009
- CARD 09-23450; HPCI/RCIC Isolation/PCV Unable to Maintain Pressure, 04/30/2009
- CARD 09-23453; Scaffold Installed in RB-1 Steam Tunnel
- CARD 09-23681; Division 2 NIAS Dryer Failure, 05/07/2009
- CARD 09-23900; Discrepancies Identified with Receipt Inspection Documentation on NIAS Valves, 05/14/2009
- CARD 09-23923; Excessive H2 Usage Found While Performing 27.112.08; 05/16/2009
- CARD 09-24001; Condition Found on Work Order 29823860; 05/20/2009
- CARD 09-24049; Increased DW Unidentified Leakage – Below Admin Lim Limit; 05/22/2009
- CARD 09-24096; Main Generator H2 Gas Dryer Fault Condition; 05/26/2009
- CARD 09-24106; Investigate Adding H2 Flow Meters to Turbine H2 Gas System; 05/27/2009
- CARD 09-24476; Increasing Temperature Trend Shown by T47N016B; 06/09/2009
- CARD 09-24729; High Drywell Temperature Alarm; 06/16/2009
- CARD 09-24732; D2 Drywell Temperature High Alarm; 06/16/2009
- CARD 09-25112, Determine if Additional Guidance is Needed for Performing Past Operability Evaluations, 6/30/2009
- Drawing 30049-15, Inlet & Exhaust Valve Assembly
- EDMI; Planned Outage 09-01, Turbine Shutdown / MSR Cooldown
- ODMI 09-004; Excessive Hydrogen Usage; 05/20/2009
- ODMI 09-005; Drywell Leakage; 05/22/2009
- Procedure 27112.08; Turbine Generator – Hydrogen Gas Usage; Revision 16
- Procedure 35.622.002, Control Air Dryer (Pall Trinity) Preventive Maintenance; Revision 45
- WO 26986764; Check Desiccant and Rebuild Inlet/Exhaust Valves; 02/21/2009
- WO 27037421; Check Desiccant and Rebuild Inlet/Exhaust Valves; 11/26/2008
- WO 27038129; Perform 27.112.08, Turbine Generator Hydrogen Gas Usage; 05/22/2009
- WO 27038129; Perform 27.112.08 Turbine Generator Hydrogen Gas Usage; 05/22/2009

Section 1R18 – Plant Modifications

- TM 09-0017; Isolate Drywell Cooler T4700B011; 06/13/2009
- TE-T47-09-051; Drywell Environment Assessment Due to T4700B011 Out of Service; 06/13/2009
- CARD 09-24634; NRC Questioned the Adequacy of Temp Mod 09-0017 Post Mod Monitoring; 06/14/2009

Section 1R19 – Post-Maintenance Testing

- CARD 09-21703, MSIV Top Works Excessive Paint Thickness
- CARD 09-21960, B MSL MSIV's Failed LLRT Test 43.401.500
- CARD 09-23216, Inboard MSIV B Hydraulic Manifold Assembly Has an Oil Leak
- CARD 09-23960; E5150F022 Did Not Fully Open;
- Design Basis Document E51-00; RCIC; Revision D
- Drawing 6M7231-5709-1; RCIC System; Revision AK
- Drawing 6M721-5709-2; RCIC Turbine Lube Oil/Control Oil; Revision F
- Manual MMA11; Post Maintenance Testing Guidelines; Revision 16
- Procedure 23.206; Section 6.2; RCIC System; Revision 91
- WO 25980121; Perform HPCI Turbine Internal Inspection; 04/17/2009
- WO 26004120; Perform Mini Periodic MOV Inspection and VPM Stroke Test
- WO 26320349, Perform 35.137.002, MSIV – Assembly, Disassembly, Repair and Adjustment

- WO 27037571; Perform 24.202.01 Sec-5.1 HPCI Pump/Flow Test and Valve Stroke at 1025 PSIG; 04/30/2009
- WO 27068428; Replace 120Vac AGASTAT (Plug-In Relay P50-CR1, Located in P50P402B (Div. 2)); 02/25/2008
- WO 28345932; Drain, Flush and Refill the RCIC Turbine Lube Oil Reservoir

Section 1R20 - Outage Activities

- CARD 09-21278; Request Engineering Review of Proposed Heavy Load Activity Required to Support RF-13 Work; 02/27/2009
- CARD 09-21910; Main Turbine High Vibrations; 03/28/2009
- CARD 09-21956; NRC Concern – Protected System Evaluation for Off-Line Vice On-Line Conditions; 03/29/2009
- CARD 09-22734; Relocate High Point Vent on Division 2 Core Spray; 04/13/2009
- CARD 09-23376; Snubber Found Misaligned During Drywell Closeout; 04/27/2009
- CARD 09-24609; 09-01 Forced Outage Leak Investigation; 06/13/2009
- CARD 09-24642; Division 1 Drywell Temperature High Alarm; 06/14/2009
- Drawing 6E721-2980-03; Underground Ducts South and West of Reactor Building & Turbine House; Revision L
- Drawing 6E721-2980-18; Underground Ducts Class I South and West of Reactor Building; Revision G
- Drawing 6M721-5706-1; RHR Division 2; Revision AA
- Master Core Loading Pattern
- Drywell Leakage Planned Outage
- Forced Outage 09-01; Leak Investigation Plan
- Forced Outage 09-01; Plan of the Day; 06/11/2009
- MMA-08; Scaffolding, Revision 12
- Procedure 22.000.02; Reactor Startup/Heatup; Revision 70
- Procedure 22.000.05 Attachment 1; Temperature/Pressure Data Sheet; 06/14/2009
- Procedure 35.000.240; Bolting and Torquing; Revision 39
- Procedure 35.CON.016; QA Level 1 and Non-Q Level 1 Pipe Support Fabrication Installation and Removal; Revision 24
- RF-13 Defense In-Depth Schedule
- Shutdown Cooling Outage Risk Management Plan
- TE-E11-09-010; Time-to-Boil Evaluation for RF-13; 02/23/2009
- TE-T22-09-037; Evaluation of the Effects of the HDPE Inner Ducts on Fire Hazard Analysis in 02ABSE; Rev. 0
- TE-T47-09-051; Drywell Environment Assessment Due to T4700B011 Out of Service; Rev. A
- Temporary Change Notice T12022; Procedure 24.202.01 HPCI Pump and Valve Operability Test at 1025 psi; Revision 9
- Temporary Modification 09-0017; Isolate the Drywell Cooler, T4700B011, and Shutdown Fan T4700C011; Rev. 0
- WO 25985935; Perform 24.206.04 Section 5.2 RCIC System Automatic Actuation Test
- WO 25988337; Perform 24.307.02; Sect 5.2 EDG 14 ECCS Start with Loss of Offsite Power Test; 04/20/2009
- WO 25988400; Perform 24.307.02; Sect 5.2 EDG 12 ECCS Start with Loss of Offsite Power Test; 04/22/2009
- WO 25990196; Perform 24.202.02 HPCI Flow Rate Test at 165 PSIG
- WR 29766753; Troubleshoot Cause for E41F011 HPCI/RCIC Isolation/PCV Unable to Maintain Pressure

Section 1R22 – Surveillance Testing

- Procedure 24.000.02, Attachment 1; RCS Operational Leakage Calculation from June 7 through June 11
- Procedure 24.202.01; HPCI Pump and Valve Operability Test at 1025 PSI
- Procedure 24.202.03; HPCI System Piping Filled and Valve Position Verification
- Procedure 24.206.04; SEC-5.2, RCIC System Automatic Actuation Test
- Procedure 43.000.005; Visual Exam During Reactor Vessel System Leakage Test
- SOE No. 09-03; Division NIAS Leakage/Usage – Compressor Performance Test; Revision 0
- SOE No. 09-05; Division 2 NIAS Leakage/Usage – Compressor Performance Test; Revision 0
- WO 25757430; Perform 46.137.002 Install Core Plate D/P for Reactor Water Level Monitoring; 03/28/2009
- WO 25800440; Perform 24.402.06 Drywell-to-Torus Bypass Leak Test; 03/28/2009
- WO 25986707; Perform 27.129.05 Division 2 NIAS Leakage/Usage – Compressor Performance Test; 04/24/2009
- WO 25986712; Perform 27.127.04 Division 1 NIAS Leakage/Usage – Compressor Performance Test; 04/23/2009
- WO 25988225; Perform 43.000.005 Visual Exam (VT-2) During Reactor Vessel System Leakage Test

Section 1EP6 -- Drill Evaluation

- Emergency Preparedness Drill/Exercise: Controller Package EF2 – Red Team Drill; 05/19/2009
- EP-101, Classification of Emergencies, Revision 35
- EP-290, Emergency Notifications, Revision 51

Section 2OS1 - Access Control to Radiologically Significant Areas

- MRP06; Accessing and Control of High Radiation, Locked High Radiation, and Very High Radiation Areas at Fermi 2; Revision 10
- RWP and Associated ALARA Documents; RWP 09-1114; MSIVs- Disassemble, Rework, Repack, Transfer to Hot Machine Shop; Revision 0
- RWP and Associated ALARA Documents; RWP 09-1152; TIP Room – Initial Entry, Explosive Valve Testing and Rework, Containment Verification, Drywell Inspection, ARM Calibration, Fire Detector Surveillance; Revision 0
- RWP and Associated ALARA Documents; RWP 09-1180; Torus Diving – De-sludge, Inspect/Repair Torus Coating Under Water; Retrieve Dropped Material, Equipment Repair Not Including Filter Removal From Torus; Revision 1
- RWP and Associated ALARA Documents; RWP 09-1251; Refuel Activities on RB-5; Revision 1

Section 2OS2 - As-Low-As-Is-Reasonably-Achievable Planning And Controls

- Procedure 63.000.200; ALARA Reviews; Revision 24
- Procedure 63.000.100; Radiation Work Permits; Revision 30

Section 4OA1 – Performance Indicator Verification

- LER 2008-001, Manual Reactor Scram in Response to a Trip of Both Reactor Recirculation Pumps
- NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 5

- Performance Indicators, Reactor Coolant System Leakage
- Performance Indicators, Unplanned Power Changes per 7000 Critical Hours
- Safety System Functional Failure PI Data; Second Quarter 2008 – First Quarter 2009
- Selected Operator Logs: April 1, 2008 through March 31, 2009

Section 4OA2 – Identification and Resolution of Problems

- CARD 08-28491, P4400F603A (Division 1 EECW Supply Isolation Valve) Did Not Stroke Closed When Pushbutton as Pressed During Performance of 24.207.05
- CARD 09-20637, E1150-F004A Would Not Stroke During the Division 1 LPCI Pump and Valve Surveillance
- CARD 09-23681; Division 2 NIAS Dryer Failure, 05/07/2009
- CARD 09-25109, Level 3 CARD Did Not Address Causes or Provide Actions to Address Causes, 6/30/2009
- CARD 09-25098, Common Cause of Identified Scaffold Deficiencies, 06/30/2009
- Drawing 6I721-2201-79, Suppression Pool to Pump “A” Valve E1150F004A, Revision G
- WR F079060100, RHR Division 1 Pump “A” Supr Pool Suction Iso
- 000Z973436, Replace MCC Bucket for E1150F004A, 07/22/1999

Section 4OA3 - Follow-Up of Events and Notices of Enforcement Discretion

- CARD 08-25712; Sludge Loading Used for ECCS Suction Strainer Design; 09/04/2008
- CARD 08-28129; E4150F600 Valve Lost Indication; 12/04/2008
- CARD 08-28468; Ty-Wraps Peek, T&B and Stainless Steel; 12/18/2008
- CARD 09-21428; Additional Errors Identified in GE Implementation of ECCS Suction Strainer Head Loss Calculation
- CARD 09-21579; Request Work Order to Remove Permanent and Temporary Shield Blankets from Drywell; 03/13/2009
- CARD 09-21910; Main Turbine High Vibrations; 03/28/2009
- CARD 09-22315; Debris Found on ECCS Suction Strainers during Inspection PM; 04/05/2009
- Draft Memorandum TMSA-07-00xx; PSA Analysis for the Presence of Non-Qualified Tefzel Ty-Wraps Inside Primary Containment; November 2007
- EFA-E11-07-005; Non-Qualified, Tefzel Ty-Wraps Inside Primary Containment; 11/12/2007 and Revision B 03/10/2009

LIST OF ACRONYMS USED

ALARA	As-Low-As-Reasonably-Achievable
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CARD	Condition Assessment and Resolution Document
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EFA	Engineering Functional Analysis
HELB	High Energy Line Break
HPCI	High Pressure Coolant Injection
IMP	Inspection Manual Chapter
IP	Inspection Procedure
ISI	In-Service-Inspection
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LLRT	Local Leak-Rate Test
MCC	Motor Control Center
NCV	Non-Cited Violation
NDE	Nondestructive Examination
NEI	Nuclear Energy Institute
NIAS	Non-Interruptible Air Supply
NRC	Nuclear Regulatory Commission
OSP	Outage Safety Plan
PI	Performance Indicator
PM	Post Maintenance
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RFO	Refueling Outage
RHR	Residual Heat Removal
RWCU	Reactor Water Clean Up
RWP	Radiological Work Permit
SDP	Significant Determination Process
SRA	Senior Risk Analyst
SSC	Structure, Systems and Components
TIP	Traversing Incore Probe
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic Examination
WO	Work Order