October 25, 2005

Mr. William O'Connor, Jr.
Vice President
Nuclear Generation
Detroit Edison Company
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: FERMI POWER PLANT, UNIT 2
NRC INTEGRATED INSPECTION REPORT 05000341/2005014

Dear Mr. O'Connor:

On September 30, 2005, 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 October 3, 2005, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and to 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, three findings of very low safety significance involving violations of NRC requirements were identified. However, because these findings were of very low safety significance and because these issues were entered into your corrective program, the NRC is treating these violations as Non-Cited Violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy. Additionally, one licensee-identified violation which was determined to be of very low safety significance is listed in 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 accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Eric Duncan, Chief
Reactor Projects Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 05000341/2005014
w/Attachment: Supplemental Information

cc w/encl: N. Peterson, Manager, Nuclear Licensing
D. Pettinari, Legal Department
Compliance Supervisor
G. White, Michigan Public Service Commission
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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: License No:	50-341 DPR-43
Report No:	05000341/2005014
Licensee:	Detroit Edison Company
Facility:	Fermi Power Plant, Unit 2
Location:	6400 N. Dixie Hwy. Newport, MI 48166
Dates:	July 1, 2005, through September 30, 2005
Inspectors:	S. Campbell, Senior Resident Inspector T. Steadham, Resident Inspector M. Franke, Resident Inspector, Perry Nuclear Power Plant D. Jones, Reactor Engineer W. Slawinski, Senior Radiation Specialist S. Thomas, Senior Resident Inspector, Davis Besse Power Plant
Observers:	M. Phalen, Radiation Specialist
Approved by:	E. Duncan, Chief Reactor Projects Branch 6 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000341/2005014; 07/01/2005-09/30/2005; Fermi Power Plant, Unit 2; Operability Evaluations, Event Follow-up.

The report covered a three month period of inspection by resident inspectors and announced inspections by a regional senior health physics inspector. Three Green findings, all of which were associated with non-cited violations (NCVs), were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). 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 3, dated July 2000.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

- Green. A Green self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified when a joint gasket on drywell cooler number 4 failed on June 25, 2005. Specifically, after maintenance in January 2005 to correct a similar gasket leak, the licensee neither checked nor re-torqued the bolts on drywell cooler number 4 as required and, therefore, failed to ensure that the gasket was sufficiently compressed to prevent the June failure. The licensee entered the issue into their corrective action (CA) program for resolution, performed a root cause evaluation, and implemented several design change packages and temporary modifications to ensure the condition does not recur. The cause of the finding is related to the cross-cutting element of problem identification and resolution (corrective action).

  This finding is greater than minor because the size of the leak caused the licensee to lose the ability to reliably monitor drywell unidentified leakage which ultimately resulted in an unplanned reactor shutdown. The finding is of very low safety significance because the finding did not contribute to both the likelihood of an initiating event and the unavailability of mitigating equipment or functions or increase the likelihood of a fire or internal/external flood. (Section 4OA3.2)

Cornerstone: Mitigating Systems

- Green. The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow established procedures. Specifically, licensee personnel failed to properly evaluate an issue regarding the installation of scaffolding near safety-related equipment. The licensee entered the deficiency into their CA program, re-evaluated all relevant scaffolds, and made adjustments as necessary. The cause of the finding is related to both the cross-cutting elements of human performance (personnel) and problem identification and resolution (corrective action).

This finding is greater than minor because the licensee routinely failed to perform the proper evaluations. Using IMC 0609, “Significance Determination Process,” all the Phase I questions under the Mitigating Systems Cornerstone were satisfied to indicate that the finding was Green and considered to be of very low safety significance. (Section 1R15.2)

Cornerstone: Barrier Integrity

- Green. A self-revealing NCV was identified for the failure to comply with 10 CFR 50, Appendix B, Criterion III, “Design Control.” The licensee did not adequately translate vendor design information regarding the torque values for installing a bearing for the division 1 control center heating, ventilation and air conditioning return fan. Consequently, the bearing degraded and required immediate shutdown for repairs during normal operation.

  This finding is greater than minor because it affected the licensee’s ability to protect the control room operators from radio-nuclide releases caused by accidents or events and was associated with the Barrier Integrity Cornerstone and the respective attribute of structure system and components and Barrier Performance. The finding was determined to be of very low safety significance because it did not result in an actual loss of safety function due to the other redundant system being available to fulfill their safety function. (Section 4OA3.1)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Unit 2 began this inspection period in shutdown mode 4 as a result of a forced outage to repair a drywell cooler gasket leak. Operators commenced startup on July 14, 2005, at 4:24 p.m. and the reactor was declared critical approximately six hours later. The reactor reached full power three days later at 10:34 a.m.

1. REACTOR SAFETY

Cornerstone: Mitigating Systems

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

During the week of August 22, 2005, the inspectors interviewed licensee personnel and reviewed the licensee's 2004 winter readiness process to determine whether recommendations and corrective actions were implemented in a timely manner. The inspectors also walked down selected areas to evaluate plant equipment susceptible to cold temperatures. Finally, the inspectors reviewed the status of licensee cold preparation checklist items for 2005 to determine if the work was completed in a timely manner.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

1. Fire Protection - Tours

a. Inspection Scope

The inspectors conducted tours of the three risk significant plant areas listed below. The inspectors verified that fire zone conditions were consistent with assumptions in the licensee's Fire Hazards Analysis. The inspectors walked down fire detection and suppression equipment, assessed the material condition of fire fighting equipment, and evaluated the control of transient combustible materials. In addition, the inspectors verified that fire protection related problems were entered into the corrective action program with the appropriate significance characterization.

- cable spreading room;
- cardox door seals in residual heat removal (RHR) complex; and
- turbine building basement.

These activities represented three inspection samples.

b. Findings

No findings of significance were identified

1R06 Flood Protection (71111.06)

a. Inspection Scope

The inspectors performed an inspection related to the licensee's precautions to mitigate the risk from internal and external flooding events. Inspectors examined the licensee’s assessment and control of internal floor hatches and drains to determine the adequacy of the licensee’s analysis for internal flooding concerns. Inspectors performed a walkdown of the following plant areas to assess the adequacy of watertight doors and verify that drains and sumps were clear of debris and were operable:

- reactor building;
- auxiliary building; and
- RHR complex.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

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

- reactor core isolation cooling (RCIC).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. Specifically, the inspectors independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping the system in accordance with Code of Federal Regulations (CFR) 10 CFR 50.65(b);
- characterizing system reliability issues;
- tracking system unavailability;
- trending key parameters (condition monitoring);

- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification and/or re-classification; and
- verifying appropriate performance criteria.

In addition, the inspectors verified that maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and operational activities affecting safety-related equipment listed below. These activities were selected based on their potential risk significance relative to the reactor safety cornerstones. As applicable for each of the activities below, the inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst and/or shift technical advisor, and verified that plant conditions were consistent with the risk assessment. The inspectors also reviewed Technical Specifications (TSs) requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Documents reviewed are listed in the attachment.

- emergency diesel generator (EDG) 13 safety system outage; and
- job number I558050100, HFA relay replacement.

These activities represented two inspection samples.

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Evolutions and Events (71111.14)

a. Inspection Scope

For the non-routine events described below, the inspectors reviewed operator logs, plant and computer data, and strip charts to determine what occurred and how the operators responded, and to determine if the response was in accordance with plant procedures and training.

- On August 3, 2005, abnormal keep-fill pressure alarms were received while performing surveillance test 24.204.01, “Division 1 Low Pressure Coolant Injection (LPCI) and Suppression Pool Cooling/Spray Pump and Valve

Operability Test", as documented on Condition Assessment Resolution Document (CARD) 05-24572. The inspectors reviewed the site response to this event.

C On August 16, 2005, abnormal RHR keep-fill pressure alarms occurred as a result of simultaneously filling the fuel pool skimmer surge tank and the condensate phase separator "A," as documented on CARD 05-24765. The inspectors reviewed the site response to this event.

These activities represented two inspection samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Routine Review of Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following three issues to ensure that the condition did not render the involved equipment inoperable or result in an unrecognized increase in plant risk. The inspectors also verified that the licensee appropriately applied TS limitations and appropriately returned the affected equipment to an operable status:

- CARD 05-23843, Evaluation of Isolating One Coil for Drywell Cooler number 4;
- CARD 05-20426, Second Drywell Cooler Failure Splash Evaluation; and
- CARD 05-25171, High Temperatures in the Non-Interruptible Air System Room.

These activities represented three inspection samples.

b. Findings

No findings of significance were identified.

.2 Inadequate Scaffold Variance Evaluations

a. Inspection Scope

The inspectors identified scaffolding erected too close to EDG 13 fuel oil transmitter lines. The inspectors interviewed operations, maintenance and engineering personnel to determine whether the licensee properly evaluated the condition for operability, extent of condition, and adequacy of corrective actions from a previous scaffolding issue involving the torus (CARD 04-24282).

These activities represented one inspection sample.

b. Findings

Introduction: The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow the scaffold erection procedure. Specifically, the licensee routinely failed to perform the requisite engineering evaluation for scaffolds erected near safety-related equipment.

Description: The Fermi 2 Maintenance Conduct Manual, MMA08, Revision 9, required that scaffold maintain a horizontal seismic clearance of three inches to all equipment in safety-related areas. The procedure also required an engineering evaluation for scaffolds built in safety-related areas where there was a high probability that a seismic variance would occur. The engineering evaluation was required to ensure the equipment would not be adversely impacted during a seismic event.

On August 25, 2005, the inspectors identified a scaffold constructed around EDG 13 that did not meet the rattlespace (the space between the scaffold and safety-related component) criteria in multiple locations to EDG fuel oil piping and associated small diameter instrument lines. Inspectors noted that although an engineer signed for the approval of the scaffold, he failed to identify any clearance issues requiring evaluation as required by the inspection checklist. The procedure checklist required identification of "components listed below" that did not meet the three-inch horizontal clearance criteria. Although the component list included an entry for instrument lines and an entry for pipes, the engineer answered "no" to all components listed. In addition, inspectors noted there were no acceptance criteria listed or justification remarks as required by the procedure.

Inspectors concluded the engineering evaluation was inadequate because it neither identified nor evaluated the noted clearance variances as required by procedure. After the inspectors notified the licensee of the discrepancies with the scaffold, maintenance personnel immediately removed it.

On August 30 and 31, 2005, inspectors found three additional scaffolds that did not meet the rattlespace requirements for the following equipment:

- T4100F010, reactor building heating, ventilation, and air conditioning (HVAC) supply outboard isolation valve;
- E5150F010, RCIC pump condensate storage tank suction isolation valve; and
- R3600S121, emergency light.

In each case, the same engineer that approved the EDG 13 scaffold also approved these other three scaffolds without identification or justification of the rattlespace violation. After the inspectors informed the licensee, another engineer re-evaluated the scaffolds and the carpenters adjusted the scaffolds as necessary. Further, the licensee disallowed the engineer's authority to approve scaffolds and entered the performance deficiency into their corrective action program as CARD 05-25013.

As documented in Section 4OA3.1 of inspection report 05000341/2004008, the inspectors identified a programmatic deficiency with how engineering was performing scaffold evaluations. As a result, the licensee revised their scaffold program and incorporated the scaffold checklist into MMA08 but did not formally train engineering personnel on the requirements of the new procedure. The inspectors determined that the failure to provide formal training contributed to this finding.

As part of their immediate corrective actions, the licensee re-inspected all scaffolds approved by the engineer located in safety-related areas of the plant and found ten scaffolds with undocumented rattlespace violations that required re-evaluation.

Analysis: The inspectors determined the failure to follow the scaffold procedure for performing the requisite seismic evaluation was a performance deficiency warranting a significance evaluation. The Mitigating Systems Cornerstone was impacted by this issue. The inspectors reviewed Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Report," Appendix E, "Examples of Minor Issues," and determined the issue was greater than minor in accordance with example 4.a because the licensee routinely failed to perform the required evaluation. Additionally, the failure to properly perform the required evaluation to support scaffold variances could become a more significant safety issue if left uncorrected.

Using IMC 0609, "Significance Determination Process (SDP)," Appendix A, "User Guide for Determining the Significance of Reactor Inspection Findings for At-Power Situations," and "SDP Phase 1 Screening Worksheet for Initiating Events, Mitigating Systems, and Barriers Cornerstones," all the Phase 1 questions under the Mitigating Systems Cornerstone were satisfied to indicate that the finding was of very low safety significance (Green).

Inspectors concluded this finding affected the cross-cutting area of human performance (personnel) because licensee personnel failed to follow the scaffold erection procedure. In addition, the inspectors determined this finding affected the cross-cutting area of problem identification and resolution (corrective action) since the licensee failed to prevent recurrence from the previous issue regarding inadequate scaffold evaluations as documented in CARD 04-24282 and inspection report 05000341/2004008.

Enforcement: Appendix B of 10 CFR 50, Criterion V, "Instructions, Procedures, and Drawings," required, in part, that activities affecting quality shall be accomplished in accordance with documented instructions. On June 1, 2005, the licensee violated this requirement when they erected a scaffold that failed to meet the seismic clearance requirements for EDG 13 without first performing an engineering evaluation as required by licensee procedures. The scaffold was removed on August 25, 2005. However, because of the very low safety significance of the issue and because the issue has been entered into the licensee's corrective action program as CARD 05-25013, the issue is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000341/2005014-01)

.3 Evaluation of EDG 12 High Bearing Temperature

a. Inspection Scope

The inspectors followed up on an elevated bearing temperature on EDG 12 during the 24-hour run conducted on September 1, 2005. The inspectors interviewed engineering personnel and reviewed several CARDs related to this issue to ensure that TS operability was properly justified and that no unrecognized increase in risk occured.

These activities represented one inspection sample.

b. Findings

Introduction: On September 1, 2005, the outboard bearing high temperature alarm for the generator on EDG 12 actuated when bearing temperatures reached approximately 190° F. At 195° F, Annunciator Response Procedure (ARP) 2A16-RHR, "Generator Bearing Temperature High," directs the operator to shut down the engine to maintain the bearing oil temperature below 202° F for the required minimum oil viscosity. Per CARD 02-15006, written to address EDG bearing temperature concerns, room temperature affects bearing temperature. The RHR HVAC system was designed to circulate inside air until room temperatures increased to 95° F. At this temperature, dampers open to allow outside ambient temperatures to cool the room.

The inspectors reviewed the data correlating outside ambient, diesel room, and bearing temperatures for the September 1, 2005, 24-hour test. The data indicated that with an outside ambient temperature of 80° F, the EDG room temperature remained at 96° F. As ambient temperature decreased, bearing temperatures remained above the alarm set point of 185° F and the EDG room temperature increased. The inspectors determined that the RHR HVAC may be ineffective at maintaining room temperatures. Also, at ambient temperatures above 80° F, the ability of RHR HVAC to keep system temperatures below the 195° F bearing shutdown limit and the required 202° F minimum viscosity limit was inconclusive.

The inspectors questioned the operability of EDG 12 for design conditions based on the outboard bearing temperature reaching 190° F during the 24-hour run. The licensee initiated CARD 05-25095 to address the inspectors' concerns. The licensee documented in the CARD that the design bases condition in the room was 116.5° F and the maximum temperature was 122° F. The design outside temperature was 95° F. Further, the licensee documented that the stator temperature, which is driven by generator load, influences bearing temperature more than ambient temperature.

This is an Unresolved Item (URI) pending Safety System Design and Performance Inspection team review of the RHR HVAC calculation and associated bearing temperature impacts. (URI 05000341/2005014-02)

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

During the week of August 23, 2005, the inspectors performed a semiannual review of the cumulative effects of operator workarounds (OWAs). The list of open OWAs was reviewed to identify any potential effect on the functionality of mitigating systems. Inspection activities included, but were not limited to, a review of the cumulative effects of the OWAs on the availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents. Additionally, the inspectors accompanied plant operators on routine rounds to discuss the effect of active OWAs with the operators and observe any actions or conditions which should be considered as possible OWAs.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The following Engineering Design Packages (EDPs) were reviewed and selected aspects were discussed with engineering personnel:

- EDPs 33678 and 33679, drywell cooler modifications; and
- EDP 32343, sample valves on EDG fuel oil tank.

In addition, the inspectors reviewed miscellaneous modifications that affected the green bands on control room instruments to determine if the green bands were appropriately revised. This activity constituted a separate inspection sample in addition to the two items above.

These documents and related documentation were reviewed for adequacy of the safety evaluation, consideration of design parameters, implementation of the modification, post-modification testing, and that relevant procedures, design, and licensing documents were properly updated. The modifications were for equipment upgrades of existing equipment.

These inspection activities represented three inspection samples.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed two post-maintenance testing (PMT) activities associated with the following scheduled maintenance:

- procedure 24.204.01; Division 1 LPCI & Torus Cooling/Spray Pump & Valve Operability Test; and
- procedure 23.106, Rev 81; Control Rod Drive Hydraulic System, Section 5.8, Control Rod Exercising.

The inspectors reviewed the scope of the work performed and evaluated the adequacy of the specified PMT. The inspectors verified the PMTs were performed in accordance with approved procedures, the procedures clearly stated acceptance criteria, and the acceptance criteria were met. The inspectors interviewed operations, maintenance, and engineering department personnel and reviewed the completed PMT documentation.

In addition, the inspectors verified that PMT problems were entered into the corrective action program with the appropriate significance characterization.

These activities represented two inspection samples.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors observed the licensee's performance during the June 25, 2005, forced outage due to a gasket failure and subsequent reactor building closed cooling water system leak from drywell cooler number 4 followed by a controlled plant shutdown to repair the leak.

This inspection consisted of a review of the licensee's outage schedule, safe shutdown plan and administrative procedures governing the outage, periodic observations of equipment alignment, and plant and control room outage activities. Specifically, the inspectors determined whether the licensee effectively managed elements of shutdown risk pertaining to reactivity control, decay heat removal, inventory control, electrical power control, and containment integrity.

The inspectors frequently performed the following activities during the forced outage:

- attended control room operator and outage management turnover meetings to verify the current shutdown risk status was well understood and communicated;
- performed walkdowns of the main control room to observe the alignment of systems important to shutdown risk;
- observed the operability of reactor coolant system instrumentation and compared channels and trains against one another; and
- performed walkdowns of the turbine building, reactor building, and drywell to observe ongoing work activities, to ensure work activities were performed in accordance with plant procedures, and to verify procedural requirements regarding fire protection, foreign material exclusion, and the storage of equipment near safety-related structures, systems, and components were maintained.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the test results for the following seven 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:

- drywell cooler 3 hyrdostatic test;
- drywell cooler 4 hydrostatic test;
- procedure 24.206.01, RCIC Pump and Valve Test;
- inventory of relay room fans and cords;
- procedure 24.201.01, Division 1 LPCI Pump and Valve Test;
- EDG 13 twenty-four hour run; and
- EDG 14 twenty-four hour run.

The inspectors reviewed the test methodology and test results to verify equipment performance was consistent with safety analysis and design basis assumptions. In addition, the inspectors verified surveillance testing problems were being entered into the corrective action program with the appropriate significance characterization.

These activities represented seven inspection samples.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed three related temporary modifications (TM) and verified the installation was consistent with design modification documents and the modifications did not adversely impact system operability or availability.

- TM 05-0021, Bypass Thermal Overload On E4150-F001, F007, F041, F042, and F079;
- TM 05-0022, Bypass Thermal Overload On E5150-F045; and
- TM 05-0023, Bypass Thermal Overload On E5150-F084.

The inspectors verified configuration control of the modifications were correct by reviewing design modification documents and confirmed that appropriate post-installation testing was accomplished. The inspectors interviewed engineering and operations department personnel, and reviewed the design modification documents and

10 CFR 50.59 evaluations against the applicable portions of the TS and Updated Final Safety Assessment Report (UFSAR).

Because these three TMs were related to the same issue, these activities represented one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the licensee perform an emergency preparedness drill on August 24, 2005, for the gold emergency response team. The inspectors observed activities in the control room simulator, technical support center, and emergency operations facility. The inspectors also attended the post-drill facility critiques in the technical support center and emergency operations facility immediately following the drill and the overall drill critique. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the drill performance and ensure the licensee evaluators noted the same weaknesses and deficiencies and entered them into the corrective action program. The inspectors placed emphasis on observations regarding event classification, notifications, protective action recommendations, and site evacuation and accountability activities. As part of the inspection, the inspectors reviewed the drill package included in the list of documents reviewed at the end of this report.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control To Radiologically-Significant Areas (71121.01)

Plant Walkdowns and Radiation Protection Technician Proficiency

a. Inspection Scope

The inspectors walked down infrequently accessed radwaste building tank and pump rooms to determine if prescribed radiological access controls, including physical barricades/barriers for these locked high radiation areas, were adequate and consistent with the licensee's procedures and TSs and to assess the material condition of the areas. During the walkdowns, the inspectors evaluated radiation protection technician performance with respect to conformance with the licensee's access control procedure, adherence to the radiation work permit used for entry into these locked high radiation areas and to assess their overall work coverage relative to the radiological hazards present.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the current revision to the licensee's Offsite Dose Calculation Manual (ODCM) and the licensee's Radioactive Effluent Release Reports for calendar years 2003 and 2004, along with selected radioactive effluent release data for 2005 through July 2005. The inspectors verified that technical evaluations were completed for modifications to the ODCM since the previous inspection of the effluent control program in 2003, and that effluent radiation monitor alarm setpoints were changed accordingly since completion of those modifications, as warranted. The inspectors also reviewed, as applicable, audits, self-assessments and licensee event reports (LERs) that involved unanticipated offsite releases of radioactive effluents. The effluent reports, effluent data, and licensee evaluations were reviewed to verify that the radioactive effluent control program was implemented as required by the radiological effluent technical specifications (RETS) and the ODCM, to verify that public dose limits from effluents were not exceeded, and to ensure that any anomalies in effluent release data were adequately understood by the licensee and were assessed and reported.

The inspectors reviewed the ODCM to identify the gaseous and liquid effluent radiation monitoring systems and associated effluent flow paths including in-line flow measurement devices and reviewed the description of radioactive waste systems and effluent pathways provided in the UFSAR in preparation for the onsite inspection.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

.2 Walkdown of Effluent Control Systems, System/Program Modifications, and Instrument Calibrations

a. Inspection Scope

The inspectors walked down the major components of the gaseous and liquid release systems (e.g., effluent radiation and flow monitors, radwaste tanks and vessels) and the radwaste control room to observe current system configuration with respect to the description in the UFSAR, to discuss ongoing activities with radwaste operations staff, and to assess equipment material condition.

The inspectors reviewed the technical justification for any changes made by the licensee to the ODCM, as well as changes to the liquid or gaseous radioactive waste system design or operation since the last inspection, to determine whether these changes affected the licensee's ability to maintain effluents as low as reasonably achievable and whether changes made to monitoring instrumentation resulted in non-representative monitoring of effluents. Annual radioactive effluent release reports for the two years preceding the inspection were evaluated for any significant changes (factor of 5) in either the quantities or kinds of radioactive effluents and for any significant changes in offsite dose which could be indicative of problems with the effluent control program. No significant adverse changes were identified.

The inspectors reviewed records of the most recent instrument calibrations (channel calibrations) for each point-of-discharge effluent radiation monitor to determine if they had been calibrated consistent with industry standards and in accordance with station procedures, TSs and the ODCM. Specifically, the inspectors reviewed calibration records for the following effluent radiation monitors:

- reactor building exhaust plenum system particulate, iodine and noble gas (SPING) radiation monitor;
- standby gas treatment system (SGTS) SPING radiation monitor (Divisions 1 & 2);
- radwaste building ventilation exhaust SPING radiation monitor;
- turbine building ventilation exhaust SPING radiation monitor;
- onsite storage building ventilation exhaust SPING radiation monitor;
- circulating water reservoir system decant line radiation monitor; and
- liquid radwaste effluent radiation monitor.

The inspectors also reviewed effluent radiation monitor setpoint bases and alarm setpoint values for these monitors to verify their technical adequacy and for compliance with ODCM criteria. Additionally, the inspectors reviewed engineering system health reports for 2004 and discussed with system engineering staff the historical performance of the process/effluent radiation monitoring system to assess the overall health of the system and the adequacy of maintenance activities for these monitors.

The inspectors reviewed chemistry department quality control data for those instrumentation systems used to quantify effluent releases for indications of potential degraded instrument performance. Specifically, the inspectors reviewed the most recent efficiency calibration records and lower limit of detection (LLD) determinations and selected other quality control data for chemistry department gamma spectroscopy systems and for the liquid scintillation and alpha counters.

These activities represented three inspection samples.

b. Findings

No findings of significance were identified.

.3 Effluent Release Packages, Dose Calculations, and Laboratory Analytical Instrumentation Quality Control

a. Inspection Scope

The inspectors selectively reviewed gaseous effluent sampling data for selected periods in 2005 through July 2005, including results of chemistry sample analyses, the application of vendor laboratory analysis results for difficult-to-detect nuclides, and the licensee's associated effluent release procedures and practices. Also, the inspectors reviewed the methods for calculating the projected doses to members of the public from these releases. Additionally, the inspectors reviewed grab sample analyses and corresponding licensee calculations for the two drywell purge gaseous (batch) releases which contained radioactive material in 2003 and 2004, including the projected offsite doses. These reviews were performed to verify that the licensee adequately applied the analysis results in its dose calculations consistent with ODCM methodology and to determine if effluents were released in accordance with the RETS/ODCM and procedural requirements. No liquid radioactive effluent releases were made in 2003 through the inspection period in 2005, as documented in the licensee's annual effluent reports.

The inspectors accompanied a chemistry technician to observe the routine weekly change-out of the particulate and iodine samplers and the collection of a tritium sample from the reactor building exhaust plenum SPING. The inspectors accompanied the technician to determine if sampling practices, sampler restoration and analytical techniques were sound and consistent with procedure, and also to determine if the sampling system was configured so as to provide representative sampling.

The inspectors reviewed the licensee's practices for compensatory sampling during periods of effluent monitor inoperability to verify compliance with ODCM requirements. The inspectors selectively reviewed quarterly dose calculations and projections to ensure that the licensee properly calculated the offsite dose from radiological effluent releases and to determine if any RETS/ODCM, i.e., Appendix I to 10 CFR Part 50, design objectives (limits) were exceeded.

The inspectors reviewed the results of the quarterly radiochemistry inter-laboratory cross-check comparisons for the five-calendar quarters preceding the inspection to validate the licensee's analyses capabilities. The inspectors reviewed the licensee's evaluation of any disparate inter-laboratory comparisons and the associated corrective actions for any deficiencies identified, as applicable. In addition, the inspectors reviewed calendar year 2004 inter-laboratory comparison data for the licensee's vendor laboratory to verify the analytical capabilities for those difficult-to-detect nuclides specified in the ODCM.

These activities represented four inspection samples.

b. Findings

No findings of significance were identified.

.4 Air Cleaning System Surveillance Tests

a. Inspection Scope

The inspectors reviewed the most recent results for both divisions of the SGTS ventilation system filter testing to verify that test methods, frequency, and test results met TS requirements. Specifically, the inspectors reviewed the results of in-place high efficiency particulate air and charcoal absorber penetration/leak tests, laboratory tests of charcoal absorber methyl iodide penetration and in-place tests of pressure differential across the combined filters/charcoal absorbers for the SGTS ventilation system.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed radiological engineering self-assessments, Nuclear Quality Assurance Department audits, and CARDs generated since 2003, which focused on the radioactive effluent treatment and monitoring program to determine if identified problems were entered into the corrective action program for resolution. The inspectors also verified that the licensee's problem identification and resolution program, together with its audit and self-assessment program, were capable of identifying repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

The inspectors reviewed various CARDs related to the radioactive effluent treatment and monitoring program generated since 2003, interviewed staff, and reviewed associated licensee evaluations and corrective action documents to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

- initial problem identification, characterization, and tracking;
- disposition of operability/reportability issues;
- evaluation of safety significance/risk and priority for resolution;
- identification of repetitive problems;
- identification of contributing causes;

- identification and implementation of effective corrective actions; and
- implementation/consideration of risk significant operational experience feedback.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator (PI) Verification (71151)

a. Inspection Scope

Cornerstone: Public Radiation Safety

The inspectors sampled the licensee's submittals for the PI listed below for the period of the forth quarter 2004 through the third quarter 2005. The inspectors used PI definitions and guidance contained in Revision 3 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The following PI was reviewed:

- Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrence.

The inspectors reviewed the licensee's CARD database and selected individual CARDs generated since this indicator was last reviewed in September 2004, to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have significantly impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for 2004 and the first half of 2005 to determine if indicator results were accurately reported. Additionally, the inspectors discussed with chemistry and protection radiation staffs its methods for quantifying effluents and determining effluent dose.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and resolution of Problems, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's corrective action system at an appropriate threshold, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed. Some minor issues entered into the licensee's corrective action program as a result of the inspectors' observations are included in the list of documents reviewed which is attached to this report.

b. Findings

No findings of significance were identified.

.2 Annual Sample: Review of Drywell Cooler Leak Splash Evaluation

Introduction: In previous quarters, the inspectors identified several issues in the area of engineering evaluations. The inspectors reviewed CARD 05-24025 because it documented a failure of the inboard main steam isolation valve (MSIV) "D" during the June 2005 forced outage and the cause of the failure was related to an inadequate evaluation of the effects of the gasket leak on drywell cooler number 4.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed CARDs 05-24025 and 05-23843 to verify the licensee's identification of the problems was complete, accurate, and timely and the consideration of extent-of-condition review, generic implications, common cause, and previous occurrence was adequate.

(2) Issues

Condition Assessment Resolution Document 05-24025 documented a condition where the inboard MSIV "D" slowly drifted closed after testing on July 5, 2005. Upon discovering the condition, the licensee identified an air leak from the valve manifold.

The licensee removed the air manifold and sent it to the manufacturer, AVCO, for failure analysis. AVCO determined the failure was due to a loss of O-ring lubrication in the exercise control valve cylinder which resulted in damage to the O-ring after the valve was stroked on July 5, 2005. The corrosion inhibitor found in the water that leaked from drywell cooler number 4 penetrated the cylinder and washed away the lubrication from the O-ring.

As documented in CARD 05-23843, the licensee completed a review of the effects of the first and second cooler leaks on February 2, 2005, and June 29, 2005, respectively. Neither evaluation identified the MSIV as being adversely affected by the leak. Consequently, the licensee performed an independent review of both evaluations. The inspectors reviewed this third evaluation and both prior splash evaluations and determined the licensee had sufficiently assessed the extent of condition and that their review of opportunities for previous identification was appropriate.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The licensee reviewed CARD 05-23843. The inspectors considered the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

(2) Issues

The inspectors determined the licensee did not adequately evaluate the effects the drywell cooler leak had on the MSIVs. Inboard MSIV "D" was directly below the cooler that leaked approximately 20,000 gallons of water during both the January and June 2005 failures. The licensee identified the MSIV as susceptible to damage from the water but limited their inspection to ensuring that all fittings, covers, and conduit were tight. The licensee did not recognize that water could also enter the manifold via vent lines and weep holes.

The licensee further determined the effects of the cooler leak would be similar to a leak of demineralized water. However, when AVCO tested a sample of reactor building closed cooling water treated with normal concentrations of the corrosion inhibitor, the treated water easily washed away the silicon-based lubricant whereas demineralized water did not.

The inspectors concluded the licensee had sufficient information to identify a source of water leakage into the manifold and they could have analyzed the effects the corrosion inhibitor had on the O-ring lubrication. Because the licensee did not identify this issue until after a self-revealing event, the inspectors considered this to be an example of inadequate engineering performance with regard to evaluation of issues.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed CARDs 05-24025 and 05-23843 to determine if the condition reports addressed generic implications and that corrective actions were appropriately focused to correct the problem.

(2) Issues

With the exception of the failure to properly evaluate and identify the degraded MSIV manifold in CARD 05-23843, the inspectors concluded the licensee's corrective actions appeared to be adequate. Once identified that the cause of the MSIV failure as documented in CARD 05-24025 was related to the cooler leak, the licensee replaced the air manifold for inboard MSIV "D" and "A" which appeared to be adequate.

.3 Annual Sample: Review of Licensee Monitoring of Drywell Temperatures

Introduction: While inspecting the licensee's operability evaluation of isolating half of drywell cooler number 4, the inspectors became concerned with the licensee's monitoring of the effects of isolating the cooler. The inspectors reviewed CARD 05-23843 and interviewed engineering and operations personnel to understand the extent of drywell monitoring as a result of isolating the cooler.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed CARD 05-23843 to verify the licensee's identification of the problems was complete, accurate, and timely, and the consideration of extent-of-condition review, generic implications, common cause, and previous occurrence was adequate.

(2) Issues

The inspectors concluded the licensee had appropriately identified the components affected by isolating half of drywell cooler number 4 and any associated impacts before isolating the cooler.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The licensee reviewed CARD 05-23843 and the associated engineering analysis EFA-T47-05-002. The inspectors considered the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

(2) Issues

The inspectors concluded the licensee's evaluation of the effects of isolating drywell cooler number 4 appeared to be appropriate. However, in reviewing the calculation to determine the thermal-induced stress on the sacrificial shield wall, the inspectors found an error that the licensee should have identified. The licensee utilized the results of a calculation from Deviation Event Report (DER) 88-1716, "High Temperature in Drywell Structural Evaluation," but failed to recognize an error in the equation given for calculating the coefficient of linear thermal expansion.

As written, the equation would have yielded unacceptable stresses with the temperature differential assumed by EFA-T47-05-002. Although the licensee's original stress calculations remained valid, a more rigorous approach by the licensee would have discovered the error.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed CARD 05-23843 and the associated engineering analysis, EFA-T47-05-002, to determine if the condition reports addressed generic implications and that corrective actions were appropriately focused to correct the problem.

(2) Issues

The inspectors determined that although the licensee identified the necessity for enhanced drywell temperature monitoring, the licensee was not appropriately monitoring those temperatures. When questioned by the inspectors, the licensee indicated they were monitoring only the drywell bulk average temperature. However, the licensee was not monitoring the effects of localized heating to ensure those effects were bounded by the assumptions made in the engineering analysis.

For example, the licensee was not monitoring the temperature differential across the sacrificial shield wall. The shield wall provided the necessary lateral support for the reactor pressure vessel under seismic and accident conditions and its failure could have impacted this function.

The inspectors learned that the annulus area exit temperatures had been increasing over the years but the licensee was not monitoring that condition. Although the temperature was below design limits, the increasing temperature trend was an indication the insulation on the pressure vessel supports could be degrading. The licensee entered this issue into their corrective action program as CARD 05-24476 to further evaluate the insulation.

As a result of the inspectors' questions, the licensee enhanced their monitoring program by monitoring more temperature points within the drywell.

.4 Annual Sample: Review of Corrective Actions on High Pressure Coolant Injection and the RCIC Systems Testing Deficiencies

Introduction: As documented in Section 1R22.1 of inspection report 05000341/2004007, the inspectors identified a Green finding for the failure to incorporate the requirements and acceptance limits contained in applicable design documents into the surveillance tests for the high pressure coolant injection (HPCI) and RCIC systems. The inspectors chose to follow-up on this issue to ensure that the corrective actions were appropriate.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed CARDs 04-23296, 04-23362, and 04-23363 to verify the licensee's identification of the problems was complete, accurate, and timely, and the consideration of extent-of-condition review, generic implications, common cause, and previous occurrence was adequate.

(2) Issues

Once the inspectors brought this concern to the licensee's attention, the licensee's identification of the deficiencies surrounding this issue was appropriate. The inspectors concluded the priority given to the issue was appropriate as well as the licensee's review of extent of condition.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors considered the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

(2) Issues

The inspectors concluded that the licensee's evaluation of the issue appeared to be appropriate. As a result of the issues raised in CARD 04-23363, the licensee expanded their evaluation to review the design margins for all safety-related pumps.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed CARDs 04-23296, 04-23362, and 04-23363 to determine if the condition reports addressed generic implications and that corrective actions were appropriately focused to correct the problem.

(2) Issues

The inspectors determined the corrective actions taken for the HPCI and RCIC surveillance tests were appropriate. In addition, the corrective actions planned for CARD 04-23296 appeared to be appropriate.

.5 Annual Sample: Review of RCIC CARDs

Introduction: The inspectors followed-up on CARDs 02-10234, 03-21350, 05-21463, 99-11578, 98-16579, 03-21694, 04-26739 and DER 96-1774 that appeared to be repeat issues regarding high severe wear index (SWI) on the outboard bearing for the RCIC pump.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed the CARDs to verify the licensee's identification of the problems was complete, accurate, and timely, and the consideration of extent-of-condition review, generic implications, common cause, and previous occurrence was adequate.

(2) Issues

The inspectors determined the licensee identified the problem of high SWI in the RCIC outboard bearing and that this identification was accurate, complete and timely. The licensee considered this condition to be a repeat occurrence and reviewed for several common cause factors.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors considered the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

(2) Issues

The licensee inconsistently applied risk insights and disposition of operability issues for the increased SWI on the RCIC pump bearings. Between January 7, 1995, and January 29, 1999, the following Work Requests (WR) were generated regarding RCIC outboard bearing high SWI chemistry results:

- WR 000Z946881 (01/07/95) - While draining, flushing and refilling both oil sumps, high wear particle concentration was found in both bearing sumps. The cause of the high SWI was never documented.
- WR 000Z953780 (06/07/95) - Oil samples taken after the quarterly run indicated increasing high SWI. The cause of the SWI was never documented.
- WR 000Z968272 (12/05/96) - Chemistry oil samples that were taken were bad. The licensee did not document the cause.
- WR 000967892 (12/12/96) - Chemistry oil samples that were taken were bad. The licensee did not document the cause.
- WR 000Z984289 (10/08/97) - High SWI was identified on the RCIC outboard bearing and the cause was documented as new bearing break in.
- WR 000Z990362 (01/28/99) - High SWI was identified during dynamic VOTES testing of valve E5150F022 and documented as being attributed to high thrust loads.
- WR 000Z990370 (01/28/99) - High SWI on the RCIC outboard bearing was attributed to bearing break in.

A risk assessment and formal operability evaluation to justify continued operation was not timely. The licensee performed this evaluation on January 29, 1999, as documented in CARD 99-11578 after seven oil samples indicated high SWI. After reviewing the operability determination, the inspectors determined the evaluation was based on limited data. Typically, bearing performance was determined by evaluating temperature, vibration and the oil sample. Since the RCIC system did not have temperature monitoring equipment installed, the licensee used only vibration and oil sample analysis. Although the oil samples indicated possible degraded bearing performance without the ability to measure temperature, the licensee's reliance on operability was solely based on vibration, which indicated below the alert range. The licensee did not consider an infrared temperature measuring device until another high SWI condition occurred on September 6, 2002, as documented on CARD 02-10234.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed the CARDs that addressed a high SWI condition to determine if the condition reports addressed generic implications and that corrective actions were appropriately focused to correct the problem.

(2) Issues

The licensee has initiated a total of 12 DERs, CARDs and WRs over the past 10 years to address high SWI in the RCIC outboard bearing. Although a RCIC operability concern does not exist, the licensee has not developed corrective actions to resolve the issue. Much of the licensee's investigation involved using offsite sampling laboratories, bearing and pump venders and the Terry Turbine Users Group. The licensee's corrective actions included closing the corrective action documents to other CARDs, replacing the bearing, or filling and flushing the bearing reservoir. The inspectors determined inappropriate resolution to this issue could render SWI as a meaningless indicator to bearing performance. Further, the inspectors were concerned the staff may become conditioned that high SWI was an acceptable condition.

.6 Annual Sample: Review of Hydrogen Gas Usage

Introduction: The inspectors reviewed historical control room logs and noticed that main generator hydrogen gas usage had been increasing over the years with numerous control room log entries. The inspectors chose this issue to review due to the potential for a hydrogen combustion which could cause an initiating event.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed CARDs 05-22130, 03-18242, 03-18099, 02-12172, 01-00413, 00-17473, 99-11880, and 99-11535 to verify the licensee's identification of the problems was complete, accurate, and timely, and the consideration of extent-of-condition review, generic implications, common cause, and previous occurrence was adequate.

(2) Issues

The licensee currently monitors hydrogen gas usage on a weekly basis using Procedure 27.112.08. Hydrogen usage has routinely exceeded the acceptance criteria of 2000 standard cubic feet per day since 1999. Since then, numerous CARDs, as documented above, have been written that identified the high usage. Although the licensee was aware of the high usage for many years and found some leaks, efforts thus far were unsuccessful in identifying all of the leaks as evidenced by the increasing trend of hydrogen usage.

The licensee believes the seals for the hydrogen oil seal system may be degrading but they also determined that seal degradation, in and of itself, does not explain the high usage rates that have been seen. Leak checks by operations and the system engineer identified five leaks they believe could, together with the degraded seals, explain the high usage values seen. Snoop checks of the known leaks indicate local hydrogen concentrations significantly below the lower explosive limits.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The licensee reviewed the above-mentioned CARDs. The inspectors considered the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

(2) Issues

The licensee evaluated the hydrogen leaks and found no significant concentrations of hydrogen in any areas; therefore, the licensee has no immediate concern of a hydrogen fire. The inspectors toured the areas of the plant in which hydrogen piping and components are located and concluded the licensee's efforts seemed appropriate in ensuring hydrogen levels remain appreciably low.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The licensee reviewed the above-mentioned CARDs to determine if the condition reports addressed generic implications and that corrective actions were appropriately focused to correct the problem.

(2) Issues

The inspectors noted the licensee issued eight CARDs since 1999 on the high hydrogen gas usage but none were successful in reducing the leakage. Currently, CARD 05-22130 is intended to establish corrective actions to restore the hydrogen usage to below the limit of 2000 standard cubic feet per day. One of the actions is to build scaffolding to the underside of the generator to check the bottoms of the hydrogen coolers for leaks during the next refueling outage. Although the inspectors determined that checking the coolers was appropriate, the inspectors noted the licensee had numerous opportunities to check the coolers in the past. The inspectors were concerned the staff may become conditioned that high hydrogen gas usage was no longer an abnormal situation and, therefore, acceptable.

4OA3 Event Followup (71153)

.1 Division 1 Control Center Heating Ventilation and Air Conditioning Return Fan Bearing Slippage

a. Inspection Scope

The inspectors interviewed maintenance, engineering and operations personnel and reviewed vendor manuals and WRs to verify that the licensee appropriately determined the cause of bearing slippage on the division 1 control center heating ventilation and air conditioning (CCHVAC) return fan.

These activities represented one inspection sample.

b. Findings

Introduction: A Green self-revealing NCV of 10 CFR 50, Appendix B, Criterion III, “Design Control,” was identified for failing to translate necessary vendor information into a WR for proper reassembly of the CCHVAC return fan during refueling outage 10.

Description: On August 6, 2005, a self-revealing finding was identified when the inboard bearing for the return fan for the division 1 CCHVAC system began to slip on the fan shaft. During refueling outage 10, maintenance personnel installed an improved design for the division 1 CCHVAC return fan bearing. To install the new bearing, the licensee dimpled the shaft and secured the outer race of the bearing with two setscrews into the dimple marks to reduce slippage between the shaft and the bearing. Maintenance personnel torqued the set screws to hold the outer bearing race to the shaft.

On August 6, 2005, control room operators shut down the division 1 CCHAVC return fan when they noted high return fan bearing temperatures and abnormal bearing noises. In response, operators started the division 2 CCHVAC system and initiated CARD 05-24619 to document the condition. The licensee formed an Emergent Issues Team consisting of engineers and maintenance personnel to investigate the cause of the failure.

During the investigation, maintenance personnel disassembled the return fan and investigated the as-found condition of the fan and dampers. Both dimple marks on the shaft had metal rubs indicating the set screws had slid out from the dimple marks. Around the shaft were groove marks and scratches caused by the setscrews contacting the shaft during shaft rotation.

Team members reviewed the work history for the bearing. Originally, the bearing incorporated a taper and locknut design where the bearing had a slip fit onto a tapered portion of the shaft and was secured with a locknut. Engineers wrote Equivalent Replacement Evaluation (ERE) 32283 and WR 000Z023670 on November 24, 2004, to address repeated bearing slippage as documented on CARDs 02-19753 and 02-15398. The licensee changed the design from the taper and locknut to the setscrew design.

Work Request 000Z023670 contained instructions to dimple the shaft, install set screws and torque per vendor manual VMS25-21, "Trane Air Handling Products - Centrifugal Fans, Sizes 12-89." However, this was the vendor manual for the taper and locknut design, which was the old style bearing. Also, the new style bearing did not require the shaft to be dimpled. Set screws were designed such that if sufficient torque were applied, the screws would bite into the shaft to ensure a snug fit.

Neither the WR nor the VMS25-21 provided a torque value and the mechanics did not record the value. Vendor instructions existed for the new style bearing during the work activity, however, the ERE made no mention of these instructions. Further, during WR preparation, the licensee did not identify the proper instructions for the new bearing design. Procedures for developing WRs and EREs were unclear as to who had the responsibility to acquire the proper instructions, the planners or the engineers. Therefore, the correct instructions were not provided to the mechanics during the replacement. The team requested a copy of instructions from the manufacturer and discovered that for the shaft size, the setscrew seating torque should be 325 inch-lbs. The licensee entered the performance deficiency into their CA program as CARD 05-24625, documenting that the setscrews may not have the proper torque value.

Analysis: The inspectors determined the failure to translate design information into a WR to properly install the outboard bearing for the division 1 CCHVAC return fan was a performance deficiency warranting a significance determination. The inspectors concluded the finding was more than minor because it affected the reliability objective of the Equipment Performance attribute under the Barrier Integrity Cornerstone.

Using IMC 0609, "Significance Determination Process (SDP)," Appendix A, "User Guide for Determining the Significance of Reactor Inspection Findings for At-Power Situations," and "SDP Phase 1 Screening Worksheet for Initiating Events, Mitigating Systems, and Barriers Cornerstones," the finding was determined to be of very low safety significance because there was no design deficiency and the equipment affected by the bearing degradation had its redundant equipment available.

Enforcement: 10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure applicable regulatory requirements and the design basis for structures, systems, and components are correctly translated into specifications, drawings, procedures and instructions. The instructions for the new CCHVAC return fan outboard bearing required a torque value be translated into work instructions to prevent slippage of the bearing without having to dimple the shaft.

Contrary to the above, on October 22, 2004, ERE 32283 was approved to replace an existing outboard CCHVAC bearing with a different design. Consequently, since the licensee lacked a process for ensuring the correct vendor information was translated into WR 000Z023670, setscrew torque values were not contained in the work instructions. This issue was entered into the licensee's corrective action program as

CARDs 05-24619 and 05-24625. However, because this violation was of very low safety significance and because it was entered into the licensee's corrective action program, this violation is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy. (NCV 05000341/2005014-03)

.2 (Closed) Unresolved Item 05000341/2005012-05: Second Failure of Drywell Cooler number 4

a. Inspection Scope

The inspectors reviewed the events and circumstances surrounding the gasket failure on drywell cooler number 4 on June 25, 2005. The inspectors interviewed engineers and operators and reviewed documents associated with the event and previous repairs of the cooler that contributed to the gasket failure in order to assess the detail and thoroughness of the licensee's review and past corrective actions.

These activities represented one inspection sample.

b. Findings

Introduction: A Green self-revealing NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was identified when a joint gasket on drywell cooler number 4 failed.

Description: As described in Section 4OA3.1 of inspection report 05000341/2005004, the joint gasket on the northwest water box for drywell cooler number 4, T4700B004, failed on January 24, 2005. Condition Assessment Resolution Document 05-20426 was written to investigate the cause of the failure. During a walkdown inside the drywell, the licensee identified the northwest outlet water box end cover gasket was extruded on cooler T4700B004. The extrusion was located at the upper right hand corner between the 7.5-inch spaced bolts.

Maintenance personnel replaced the gaskets on drywell coolers 1, 2, 3, 4, and 10 and torqued all the bolts to 60 ft-lbs. Based on technical guidance contained in the Electric Power Research Institute (EPRI) Report 1000922, "Assembling Bolted Connections Using Sheet Gaskets," the post-maintenance test included a bolt re-torque 24 hours after installation. However, the licensee later decided to check a sample of 4 bolts on drywell cooler number 2 to determine the amount of relaxation. The relaxed torque measurements on those 4 bolts were between 45 and 47 ft-lbs which were consistent with the assumed 20 percent loss estimated by the licensee. A final leak check at the normal emergency equipment cooling water operating pressure of 100 psig was performed satisfactory and the coolers were returned to service.

On June 25, 2005, operators shut down the plant due to increased drywell leakage. After inspecting the drywell, the source of the leakage was verified to be from a blowout of the same gasket and at the same location on drywell cooler number 4. As with the January failure, the cause of the June failure was attributed to inadequate gasket compression.

After further analysis, the licensee decided to isolate the portion of the drywell cooler that leaked. Additional corrective actions taken during the second forced outage included the installation of a gasket retainer and strongbacks to increase the rigidity of the bolted connection. The licensee consulted with independent industry and academic experts to validate the corrective actions taken would prevent recurrence of a leak. Further, the licensee decided to replace both drywell cooler numbers 2 and 4 during the next scheduled outage.

The inspectors determined the licensee misinterpreted the technical guidance in EPRI report 1000922. Consequently, the licensee's corrective actions from the January event were inadequate to prevent the June event. Specifically, although approximately 20 percent torque loss was expected due to relaxation, EPRI recommended the bolts be re-torqued to their original value after the 24-hour relaxation period. Instead, the licensee construed this guidance to mean the torque after 24-hours should be within approximately 20 percent of the intended torque. As a result the licensee failed to re-torque all the bolts to 60 ft-lbs as described in the EPRI guidance.

Because the licensee neither checked nor re-torqued the bolts on drywell cooler number 4 after the 24-hour relaxation period, the licensee failed to ensure the gasket was sufficiently compressed to prevent the subsequent blowout.

Analysis: The inspectors determined the failure to check and re-torque the water box cover bolts for drywell cooler number 4 was a performance deficiency warranting a significance evaluation. The inspectors concluded the finding was more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." The deficiency led to a more significant safety concern because it was left uncorrected. Specifically, the licensee lost the ability to reliably monitor drywell unidentified leakage because of the size of the leak and ultimately resulted in an unplanned reactor shutdown, thereby affecting the Initiating Events Cornerstone. The finding also affected the cross-cutting issue of problem identification and resolution (corrective action) because the licensee's corrective actions from the January failure were not sufficient to prevent the June failure.

Using IMC 0609, "Significance Determination Process (SDP)," Appendix A, "User Guide for Determining the Significance of Reactor Inspection Findings for At-Power Situations," and "SDP Phase 1 Screening Worksheet for Initiating Events, Mitigating Systems, and Barriers Cornerstones," the finding was determined to be of very low safety significance (Green) because the finding did not contribute to both the likelihood of an initiating event and the unavailability of mitigating systems or functions, or increase the likelihood of a fire or internal/external flood.

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, required corrective actions to preclude repetition of significant conditions adverse to quality. The water box gasket for drywell cooler number 4 was a safety-related component whose failure prevented the licensee from reliably monitoring drywell unidentified leakage in accordance with TS surveillance requirement 3.4.4.1 and, thus, constituted a significant condition adverse to quality.

Contrary to the above, the licensee's corrective actions from the failure of drywell cooler number 4 on January 24, 2005, were inadequate to prevent an identical failure on June 25, 2005. The licensee entered this issue into their corrective action program as CARD 05-23843. However, because this violation is of very low safety significance and because it was entered into the licensee's corrective action program, this violation is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy. (NCV 05000341/2005014-04)

As part of the licensee's immediate corrective actions, the affected cooler was isolated and teams were formed to investigate the cause of the failure and corrective actions to prevent further drywell cooler leaks. The licensee installed a gasket retainer and new gaskets for coolers 1, 2, 3, 4, and 10. After a 24-hour relaxation period, all bolts were re-torqued to ensure adequate compression. In addition, strongbacks were installed on the end bell water boxes to increase the rigidity of the tube sheet sealing surfaces. Lastly, because the licensee did not have confidence in the integrity of the northwest water box, they isolated the cooling water to the north coil for drywell cooler number 4.

.3 (Closed) LER 50-341/2004-002: Automatic Reactor Shutdown Due to Automatic Voltage Regulator Failure

On September 3, 2004, during normal plant operation, a turbine trip and reactor scram occurred at 100 percent reactor power. The turbine trip was due to an automatic voltage regulator (AVR) failure because of a circuit board fault. This failure caused a trip of both the operating channel voltage regulator and the field breaker. The AVR vendor, Asea Brown Boveri inspected the faulted components and concluded the card failure was a random occurrence. No previous alarms were noted that were indicative of a degrading card and Asea Brown Boveri did not believe a failure in one channel would cause a complete AVR failure. As such, the inspectors determined the licensee did not have sufficient information available at the time to know that a complete AVR failure was eminent such that the plant could be maneuvered to prevent a scram. This LER was reviewed by the inspectors and no findings of significance were identified. The licensee entered this issue into their corrective action program as CARD 04-24040. This LER is closed.

.4 (Closed) LER 50-341/2005-004: Both RHR LPCI Divisions Inoperable Due to Valve E1150-F017B Failing to Open

On June 16, 2005, while performing the division 2 LPCI and suppression pool cooling/spray pump and valve operability test, the division 2 RHR LPCI valve E1150F017B failed to reopen after being closed. With the valve closed and a postulated failure on the division 1 RHR LPCI loop, the LPCI loop select feature to open the valve was rendered inoperable.

In response, control room operators entered TS limiting condition for operation (LCO) 3.0.3 to place the unit in hot shutdown within 14 hours. The licensee initiated MWC05 troubleshooting form to investigate the valve opening and closing circuit. During their investigation, electricians identified a high resistance reading, approximately 8.2 Megohms, on the auxiliary switch contact associated with the closing contactor. Electricians depressed the auxiliary switch 4 times and resistance remained high.

Electricians then depressed the closing contactor once and the resistance returned to normal, allowing the valve to be opened and the LCO exited. The licensee replaced the auxiliary switch on the closed contactor under WR 000Z051888 and stroke tested the valve satisfactorily.

The licensee conducted a root cause investigation and sent the failed auxiliary switch to an offsite testing lab for analysis. The lab results reported the contact surfaces for the switch were in good condition. Further, cyclic testing of the auxiliary switch at the lab did not result in a failure or mechanical problems.

The licensee reviewed the maintenance history of the valve and did not identify any issues. The licensee conducted an industry and site wide search of equipment databases for similar failures. The only failure where the closing contact provided a high resistance was the HPCI pump minimum flow valve E4150F012 at Fermi. This failure was documented on CARD 01-19608 on November 17, 2001. Probable cause of this failure was dirt or debris interfered with the contacts closing. Similar to this failure, the licensee concluded that dirt or debris had prevented the auxiliary switch for the closed contactor for E1150F017B from making up.

The inspectors discussed this issue with the system engineer, reviewed the root cause report and the laboratory report, and searched similar equipment performance databases for similar failures. No generic concerns for the motor operated valve control power were evident during the reviews and interviews. The inspectors questioned the acceptability of evaluating only the auxiliary switch when cycling the contactor had corrected the problem. The licensee determined that depressing the contactor provided significant force to clear any obstruction in the auxiliary switch. Further review of the contactor design, the inspectors determined a problem with the contactor coil was inconsistent with the failure. Nevertheless, the licensee had initiated WR 000Z052695 to replace the contactor during the next refueling outage. The inspectors determined the licensee had implemented adequate corrective actions to resolve the issue. This item is closed.

4OA5 Other

.1 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

d. Inspection Scope

The inspectors reviewed the final report for the INPO plant assessment of Fermi Power Plant conducted in May 2005. The inspectors reviewed the report to ensure that the issues identified were consistent with the NRC perspectives of licensee performance and to verify if any significant safety issues were identified that required further NRC follow-up.

e. Findings

No findings of significance were identified.

Cornerstones: Initiating Events and Mitigating Systems

.2 NRC Temporary Instruction (TI) 2515/163, "Operational Readiness of Offsite Power"

The objective of Temporary Instruction (TI) 2515/163 was to confirm, through inspections and interviews, the operational readiness of offsite power systems in accordance with NRC requirements. The inspectors reviewed licensee procedures and discussed the attributes identified in TI 2515/163 with licensee personnel during the second quarter of 2005. The results of the inspectors' review were forwarded to the Office of Nuclear Reactor Regulation (NRR) for additional review and evaluation.

Following review and evaluation by the NRR staff, several follow-up questions were sent back to the inspectors for discussion with licensee personnel. The results of the inspectors' review and discussion of the follow-up questions, performed during the third quarter of 2005, were again forwarded to NRR for evaluation.

The completion of this TI was documented in NRC inspection report 05000341/2005012 and represented one inspection sample. The follow-up questions the inspectors discussed with licensee personnel during this inspection period were considered a part of the original inspection sample, and did not constitute an additional inspection sample for this TI.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

On October 3, 2005, the inspectors presented the inspection results to Mr. O'Connor and other members of licensee management at the conclusion of the inspection. The inspectors asked the licensee whether any material examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meeting Summary

On August 26, 2005, an interim exit meeting was conducted for the radiation protection RETS/ODCM inspection with Mr. Cobb and other licensee staff.

4OA7 Licensee-Identified Violations

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 Manual, NUREG-1600, for being dispositioned as an NCV.

Cornerstone: Barrier Integrity

On August 9, 2005, the licensee replaced the inboard bearing on the division 1 CCHVAC return fan under WR 000Z052401. The licensee identified a concern with excessive bearing-to-shaft clearances along with a worn shaft but evaluated the condition as acceptable based, in part, on vendor input. On August 24, 2005, the licensee was performing vibration monitoring of the fan and identified an increase in the inboard vibration level, removed the fan from service, and entered this issue into their corrective action program as CARD 05-24907. The licensee determined excessive clearance between the shaft and inboard bearing caused the high vibrations and subsequently replaced the shaft and bearings.

10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” required the licensee to take corrective action to prevent recurrence of significant conditions adverse to quality. Contrary to this, the licensee failed to take appropriate corrective actions on August 9, 2005, to prevent a repeat failure on August 24, 2005. The issue was of very low safety significance as there was no design deficiency with the fan and the equipment affected by the bearing degradation had its redundant equipment available.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
W. O'Connor, Jr., Vice President Nuclear Generation
D. Cobb, Station Director
D. Bermooser, Manager, Maintenance
R. Gaston, Manager, Nuclear Licensing
K. Hlavaty, Plant Manager
H. Higgins, Manager, Radiation Protection
R. Libra, Director, Nuclear Engineering
N. Peterson, Manager, Nuclear Corrective Action/Performance Assessment
M. Philippon, Manager, Operations

NRC

E. Duncan, Chief, Division of Reactor Projects, Reactor Projects Branch 6

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000341/2005014-02	URI	Evaluation of EDG 12 High Bearing Temperature (Section 1R15.3)

Opened and Closed

05000341/2005014-01	NCV	Inadequate Scaffold Variance Evaluations (Section 1R15.2)
05000341/2005014-03	NCV	Division 1 Control Center Heating Ventilation and Air Conditioning Return Fan Bearing Slippage (Section 4OA3.1)
05000341/2005014-04	NCV	Second Failure of Drywell Cooler number 4 (Section 4OA3.2)

Closed

05000341/2005012-05	URI	Second Failure of Drywell Cooler number 4 (Section 4OA3.2)
05000341/2004-002	LER	Automatic Reactor Shutdown Due to Automatic Voltage Regulator Failure (Section 4OA3.3)
05000341/2005-004	LER	Both RHR Low Pressure Coolant Injection Divisions Inoperable Due to Valve E1150-F017B Failing to Open (Section 4OA3.3)

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 of 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

- 27.000.04; Freeze Protection Lineup Verification; Rev. 30
- 27.000.07; Cold Weather Operations, Rev. 0
- Detroit Edison - Fermi 2 Work Request Scheduling & Tracking; Work Code M-Cold05; dated August 23, 2005
- Detroit Edison - Fermi 2 Work Request Scheduling & Tracking; Work Code M-Cold05A; dated August 23, 2005
- 27.000.07 Attachment 3; System Readiness Review Checklist; System P6100; dated
- May 18, 2005
- 27.000.07 Attachment 3; System Readiness Review Checklist; System P2100; dated
- May 18, 2005
- 27.000.07 Attachment 3; System Readiness Review Checklist; System P1100; dated
- May 12, 2005
- 27.000.07 Attachment 3; System Readiness Review Checklist; System X4100; dated
- May 24, 2005
- 27.000.07 Attachment 3; System Readiness Review Checklist; System V4100; dated
- May 24, 2005
- 27.000.07 Attachment 3; System Readiness Review Checklist; System P4100; dated
- May 23, 2005
- 27.000.07 Attachment 3; System Readiness Review Checklist; System E1151; dated
- May 20, 2005
- 27.000.07 Attachment 3; System Readiness Review Checklist; System D4000; dated
- May 18, 2005

Section 1R05: Fire Protection

- Procedure FP-TB, Rev. 6; Turbine Building Fire Protection Pre-Plan

Section 1R06: Flood Protection

- UFSAR Section 2.4.2.2; Flood Design Consideration, Revision O
- Work Request # T236030100; Reactor/Auxiliary Buildings - Penetrations; dated April 6, 2003
- Work Request # T510000100; High Pressure Coolant Injection (HPCI)/Torus Water Management (TWM) Pumps Room Watertight (RSB-1) Door; dated August 9, 2000

Section 1R12: Maintenance Effectiveness

- Operator Logs for RCIC System from July 1, 2002 to July 1, 2005
- E5100 Monthly Maintenance Rule Report; dated July 28, 2002
- Maintenance Rule Out of Service Evaluation for RCIC E5100; dated July 1, 2002 through July 1, 2005
- Maintenance Rule Functional Failure Evaluation for E5100; dated July 1, 2002 through July 1, 2005

Section 1R13: Maintenance Risk Assessment and Emergent Work Control

- Job number I558050100, HFA relay replacement
- Log number 96-001, Revision 1, "Development of Conditional Probability for SSC Modeled in the Fermi 2 PSA; October 2, 1998
- EDG 13 Safety System Outage; Plan of the Day week of August 15, 2005

Section 1R14: Operator Performance During Non-Routine Plant Evolutions and Events

- CARD 05-24765; Received 2D86, RHR Division 1 / 2 Fill Line Pressure Low
- Selected Operator Logs; Dated November 2, 1998, November 5, 1998, November 8, 1998, August 3, 2005, and August 16, 2005
- Job 0261050802; Perform 24.204.01 Division 1 LPCI & Torus Cooling/Spray Pump & Valve Operability Test
- CARD 05-24572; Valve Stroke

Section 1R15: Operability Evaluations

- EFA T47-05-002, Rev. 0; Evaluation of Isolating Half of Drywell Cooler number 4
- DER 89-0480, Evaluate NRC Notice 89-30: High Temperature Environments at Nuclear Power Plants
- DER 88-1716, Drywell Cooler System
- STR 2005-002161
- CARD 05-25013; Seismic Checklist for Scaffold Tage 9710333 Was Not Adequately Completed
- CARD 04-24282; Scaffolding Touching the Torus
- Fermi 2 Maintenance Conduct Manual; MMA08; Rev. 9

Section 1R16: Operator Workarounds

- Operator Challenges; dated August 23, 2005

Section 1R17: Permanent Plant Modifications

- EDP-33678, Rev. B; Installation of Drywell Cooler Gasket Retainer
- EDP-33679, Rev. B; Installation of Drywell Cooler Tube Sheet Backing Bars
- DC-6252, Volume 1, Rev. 0; Bolt Torque Requirements for Drywell Cooling Coils

Section 1R19: Post Maintenance Testing

- 24.204.01, Rev 55; Div 1 LPCI & Torus Cooling/Spray Pump & Valve Operability Test
- 44.030.215, Rev 26; 44.030.215, ECCS RHR Pump C Discharge Pressure (ADS Permit) Div1 Functional Test
- 23.106, Rev 81; Control Rod Drive Hydraulic System

Section 1R20: Refueling and Other Outage Activities

- Operations Conduct Manual MOP 22; Operations Outage Management, Revision 1
- Procedure 22.000.05; Pressure/Temperature Monitoring During Heatup and Cooldown, Revision 39

Section 1R22: Surveillance Testing

- RCIC Maintenance Rule System Performance Monitoring Plan
- Memorandum TMTE-99-0254; Cold Start Requirements for RCIC; Dated September 10, 1999
- Log No. 04-035, Rev. 1; ISI/NDE-IST-Program Evaluation Sheet; Dated October 14, 2004
- Memorandum TMPE-04-0281; Review of IST Acceptance Criteria for HPCI Pump Test
- Job ID 0268050301; Perform 24.206.01 RCIC System Pump Operability and Valve Test at 1000 psig

Section 1R23: Temporary Plant Modifications

- WR 000Z052850; Bypass Thermal Overloads on HPCI Valves
- WR 000Z052855; Bypass Thermal Overload Contacts (E5150F045)
- WR 000Z052856; Bypass Thermal Overload Contacts (E5150F084)
- CARD 05-25393; Various DC MOVs Are Possibly Inoperable Due to TOL Sizing Not Meeting the Requirements of Specification 3071-128-EZ-03
- TM 05-0021, Bypass Thermal Overload On E4150-F001, F007, F041, F042, and F079;
- TM 05-0022, Bypass Thermal Overload On E5150-F045, and
- TM 05-0023, Bypass Thermal Overload On E5150-F084.

Section 1EP6: Drill Evaluation

- Scenario 39, Site RERP Gold Team Drill; dated August 24, 2005

Section 2OS1: Access Control To Radiologically-Significant Areas

- Radiation Protection Work Instruction Quarterly and Semi-Annual Surveillance Records for 2005; WI-RP-011, Attachments 4 and 5; Radwaste Tank/Pump Room Surveys
- Radiation Protection Conduct Manual; Chapter 6; Accessing and Control of High Radiation, Locked High Radiation, and Very High Radiation Areas; Revision 7

Section 2PS1: Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

- Fermi 2 Offsite Dose Calculation Manual - Technical Requirements Manual Volume II; Revision 13
- Fermi 2 Annual Radioactive Effluent Release Reports for Calendar Years 2003 and 2004; dated April 30, 2004, and April 29, 2005, respectively
- Plant Technical Procedure 67.000.502; Eberline Radiation Monitors General Sampling; Revision 12
- Plant Technical Procedure 62.000.115; Batch Gaseous Release Evaluations; Revision 6
- Plant Technical Procedure 62.000.114; Gaseous Effluent Release Evaluations for Non-Gamma Emitters; Revision 3
- Radiation Protection Conduct Manual; MRP-02; Administrative Controls; Revision 10
- Plant Technical Procedure 62.000.100; Radioactive Effluent and Dose Tracking; Revision 5
- Surveillance Records for Procedure 64.080.206; Reactor Building Exhaust Plenum Process Radiation Monitoring System Calibration; dated June 3, 2004
- Surveillance Records for Procedure 64.080.203; Standby Gas Treatment Exhaust Process Radiation Monitoring System Calibration; Division 1 dated March 25, 2004; Division 2 dated July 14, 2005
- Surveillance Records for Procedure 64.080.212; Radwaste Building Ventilation Exhaust Process Radiation Monitoring System Calibration; dated May 26, 2005
- Surveillance Records for Procedure 64.080.214; Turbine Building Ventilation Exhaust Process Radiation Monitoring System Calibration; dated May 27, 2004
- Surveillance Records for Procedure 64.080.218; Onsite Storage Building Ventilation Exhaust Process Radiation Monitoring System Calibration; dated July 21, 2005
- Surveillance Records for Procedure 64.080.110; Circulating Water System Decant Line Radiation Monitor Radiological Calibration; dated February 23, 2005
- Surveillance Records for Procedure 64.080.102; Radwaste Effluent Radiation Monitor Radiological Calibration; dated December 16, 2004
- Plant Technical Procedure 62.000.133; Changing Radiation Monitor Set Points; Revision 4
- Plant Technical Procedure 62.000.112; Noble Gas Site Boundary Dose Rate and Set Point Evaluation; Revision 7
- Work Packages for Radiation Monitor Alarm Set Point Change to Reactor Building Ventilation Exhaust SPING (dated May 12, 1993); Standby Gas Treatment SPING (dated July 16, 1993); Radwaste Building Ventilation Exhaust SPING (dated May 21, 1993); Turbine Building Ventilation Exhaust SPING (dated May 17, 1993)
- Efficiency Calibrations, LLD Determinations and Quality Control Data for Gamma Spectroscopy Systems (ND-0-01 & 02); dated various periods in 2005
- Results of Radiochemistry Cross Check Program for Fermi II; First Quarter 2004 - First Quarter 2005
- Quality Control Data for Tenelec Solo Alpha/Beta Counting System; 2005 through July 2005
- Surveillance Records for Procedure 43.404.002; Standby Gas Treatment Filter Performance Tests (Division 1 & 2) for Visual Inspection, In-Situ Penetration/Leak Test, and Flow Verification/Pressure Drop Test; dated various periods in 2004

- NUCON International, Inc; Report of Iodine-131 Removal Efficiency Determination of Adsorbent Sample from SGTS; (Division 1) dated September 27, 2004 and (Division 2) dated September 11, 2004
- Deviation Event Reports (No. 85-045 and No. 96-0737) and Associated Memorandums; Evaluation of Reactor Building SPING Sampling Issues
- CARD 04-23196; Circulating Water Decant Line Radiation Monitor Alarm; dated July 15, 2004
- CARD 04-23964; LLD Requirements of ODCM Not Implemented in Plant Procedures; dated September 1, 2004
- Nuclear Quality Assurance Audit Report 05-0101; Radiological Effluents Monitoring Program and ODCM; dated March 04, 2005

Section 4OA1: Performance Indicator Verification

- Summary of Quarterly Dose Calculations from Gaseous Effluents for Fourth Quarter 2004 through Second Quarter 2005

Section 4OA2: Identification and Resolution of Problems

- CARD 05-22130, “Hydrogen Gas Usage Trending Up”
- Memorandum TMPE-04-0281; Review of IST Acceptance Criteria for HPCI Pump Test
- Safety Evaluation Screen 04-0506, Rev. 0; Chemical Addition of a Corrosion Inhibitor Into the RBCCW/EECW/Supplemental Cooling Systems During RF10
- WR 000Z052087; Inboard MSIV “D” Air Leakage
- Job ID 0983050417; Perform 24.137.01 Main Steam Line Isolation Valve Channel Functional Test
- CARD 05-24025; Inboard MSIV “D” (air leakage)
- CARD 05-23843, Action Item 3; Independent Review of the June 2005 Splash Review
- Review of Effects of Spray from Drywell Cooler number 4; Dated June 29, 2005
- Review of Effects of Spray from Drywell Cooler number 4; Dated February 1, 2005
- EFA T47-05-002, Rev. 0; Evaluation of Isolating Half of Drywell Cooler number 4
- DER 89-0480, Evaluate NRC Notice 89-30: High Temperature Environments at Nuclear Power Plants
- DER 88-1716, Drywell Cooler System
- CARD 04-23296; IST Acceptance Criteria for HPCI Pump
- CARD 04-23362; RCIC Flow at Design Pressure May Not Meet Design Requirement
- CARD 04-23363; HPCI Flow at Design Pressure May Not Meet Design Requirement
- Procedure 24.202.01, Rev. 84; HPCI Pump Time Response and Operability Test at 1025 PSI
- Procedure 24.202.02, Rev. 41; HPCI Flow Rate Test at 165 PSI Reactor Steam Pressure
- Procedure 24.206.01, Rev. 63; RCIC System Pump and Valve Operability Test
- WR 000Z042541; AVR General Alarm and Trip of AVR Channel A. Reset AVR Channel 1 Power Supply
- CARD 04-24040; Reactor SCRAM on AVR Relay Trip
- CARD 04-24023; AVR General Alarm and Trip of AVR Channel A
- Memorandum NANL-05-0042; Transmittal of Nuclear Assessment Independent Evaluation Report

- LER 2004-002; Automatic Reactor Shutdown Due to Automatic Voltage Regulator Failure
- CARD 02-10234, High SWI on RCIC Pump Bearings Significance Level Change from 4 to 3
- CARD 03-21350, High SWI on RCIC Pump Outboard Bearing
- CARD 05-21463, High SWI Results on RCIC Pump Outboard Bearing
- CARD 99-11578, RCIC Pump Outboard Bearing Oil High Water and Sediment SWI
- CARD 98-16579, High SWI on RCIC Pump Outboard Bearing
- DER 96-1774, High Sediment in RCIC Pump Bearing Oil 5B-2 Trans to CARD 98-12420 3/16/98
- CARD 03-21694, Abnormal Ferrous Metals in Oil From RCIC Pump Inboard Bearing
- CARD 04-26739, High SWI in RCIC Pump Outboard Bearing

Section 4OA3: Event Follow-Up

- CARD 05-20426; Unexpected Increase in Drywell Unidentified Leakage
- WR 000Z050246; Replace the Endbell Gasket on Drywell Cooler number 4
- OSRO Meeting number 1041 Minutes; Dated February 1, 2005
- CARD 05-23843; EECW Drywell Leak

Section 4OA5: Other Activities

- AQP-0001, Rev. A; Augmented Quality Program 120kV and 345 kV Switchyard, Transformers, and Peaker CTG 11-1 Configuration
- AQP-0002, Rev. 0; Augmented Quality Program ITC-Fermi 2 Interface 120kV and 345kV Switchyards
- Work Control Conduct Manual MWC02, Rev. 28; Work Management Process
- Operations Department Expectation ODE-11, Rev. 0; CARD Operability Determination Expectations
- Letter number NRC-05-0051; Additional Information Related to the Proposed License Amendment Request to Revise TS Requirements Associated with LCO 3.8.1 for Inoperable Offsite Circuits
- Generator Interconnection and Operation Agreement between International Transmission Company and the Detroit Edison Company
- Fermi 2 Work Control Conduct manual MWC07, Rev. 0; Online Scheduling Process
- Fermi 2 Maintenance Rule Conduct Manual MMR12, Rev. 2; Equipment Out of Service Risk Management

LIST OF ACRONYMS USED

AVR	Automatic Voltage Regulator
CA	Corrective Actions
CARD	Condition Assessment Resolution Document
CCHAVC	Control Center Heating, Ventilation & Air Conditioning
CFR	Code of Federal Regulations
DER	Deviation Event Report
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
EDP	Engineering Design Package
EPRI	Electric Power Research Institute
ERE	Equivalent Replacement Evaluation
HPCI	High Pressure Coolant Injection
HVAC	Heating Ventilation and Air Conditioning
IMC	Inspection Manual Chapter
LCO	Limiting Condition for Operation
LLD	Lower Limit of Detection
LER	Licensee Event Report
LPCI	Low Pressure Coolant Injection
MSIV	Main Steam Isolation Valve
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
ODCM	Offsite Dose Calculation Manual
OWA	Operator Work-Around
RCIC	Reactor Core Isolation Cooling
RETS	Radiological Effluent Technical Specifications
RHR	Residual Heat Removal
PI	Performance Indicator
PMT	Post-Maintenance Testing
SDP	Significance Determination Process
SGTS	Standby Gas Treatment System
SPING	System Particulate, Iodine and Noble Gas Monitor
SWI	Severe Weather Index
TI	Temporary Instruction
TM	Temporary Modifications
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WR	Work Request