May 5, 2004

Mr. Lew W. Myers
Chief Operating Officer
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State Route 2
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION
NRC INTEGRATED INSPECTION REPORT 05000346/2004006

Dear Mr. Myers:

On March 31, 2004, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Davis-Besse Nuclear Power Station. The enclosed inspection report documents the inspection findings which were discussed on April 9, 2004, with members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. For the entire inspection period, the Davis-Besse Nuclear Power Station was under the Inspection Manual Chapter (IMC) 0350 Process. The Davis-Besse Oversight Panel assessed inspection findings and other performance data to determine the required level and focus of followup inspection activities and any other appropriate regulatory actions.

The report documents one NRC-identified finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it was entered into your corrective action program, the NRC is treating this finding as a Non-Cited Violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. This finding did not present an immediate safety concern.

If you contest the Non-Cited Violation in this report, 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 copies to the Regional Administrator, Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-001; and the NRC Resident Inspector at Davis-Besse.

In addition, this report documents the results of the Initial Criticality and Power Ascension Team Inspection and specific observations of activities beginning with zero power physics testing and subsequent power ascension to approximately 80 percent power. The overall goal of this inspection was to verify the ability of the licensee to conduct a safe startup and power ascension to 100 percent reactor power. Key focus areas of the inspection team were: Control

Room Activities; Conduct of Pre-Evolution Briefs, Shift Turnovers, General Communications; Management Decision Making, Support Department Performance, and General Material Condition and Housekeeping. The team concluded that the overall performance of the licensee was adequate to support continued safe operation of the 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 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/

John A. Grobe, Chairman
Davis-Besse Oversight Panel

Docket No. 50-346
License No. NPF-3

Enclosure: Inspection Report 05000346/2004006
w/Attachment: Supplemental Information

cc w/encl: The Honorable Dennis Kucinich
G. Leidich, President - FENOC
J. Hagan, Senior Vice President
Engineering and Services, FENOC
Plant Manager
Manager - Regulatory Affairs
M. O'Reilly, Attorney, FirstEnergy
Ohio State Liaison Officer
R. Owen, Administrator, Ohio Department of Health
Public Utilities Commission of Ohio
President, Board of County Commissioners
of Lucas County
C. Koebel, President, Ottawa County Board of Commissioners
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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-346
License No:	NPF-3
Report No:	05000346/2004006
Licensee:	FirstEnergy Nuclear Operating Company (FENOC)
Facility:	Davis-Besse Nuclear Power Station
Location:	5501 North State Route 2 Oak Harbor, OH 43449-9760
Dates:	February 15, 2004, through March 31, 2004
*Inspectors:	S. Thomas, Senior Resident Inspector J. Rutkowski, Resident Inspector M. Salter-Williams, Resident Inspector J. Brady, Senior Resident Inspector (McGuire)
Approved by:	Christine A. Lipa, Chief Branch 4 Division of Reactor Projects

* Multiple additional inspectors participated in Restart Inspection. See Section 4OA5 for complete list.

Enclosure

SUMMARY OF FINDINGS

IR 05000346/2004006; 2/15/2004 - 3/31/2004; Davis-Besse Nuclear Power Station; Other Activities.

This report covers a 7 week period of resident inspection, and includes the results of the Initial Criticality and Power Ascension Team Inspection. The inspection was conducted by resident and region based inspectors. One Green finding associated with one non-cited violation (NCV) was 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. Inspector-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

Green. The inspectors identified a finding of very low safety significance when they discovered that the licensee failed to provide adequate work control documents to safely perform the work activity for the removal of the actuator on motor-operated valve FW780 with the feedwater system at full operating pressure.

The inspectors determined that the finding was more than minor because, if left uncorrected, it could contribute to the likelihood of those events that upset plant stability. Specifically, the failure of the stem locking device, with the actuator removed, could have resulted in the ejection of the valve stem, resulting in a feedwater system transient and personnel injury. The finding was of very low safety significance because the finding: (1) was not associated with the likelihood of primary or secondary system LOCA initiation; (2) did not contribute to the likelihood that mitigation systems would be unavailable; and (3) was not associated with fire or flood. The issue was determined to be a Non-Cited Violation of Technical Specification 6.8.1. (Section 1R12)

B. Licensee Identified Findings

No findings of significance were identified.

REPORT DETAILS

Summary of Plant Status

The plant was shutdown on February 16, 2002, for a refueling outage. During scheduled inspections of the control rod drive mechanism (CRDM) nozzles, significant degradation of the reactor vessel head was discovered. As a direct result of the need to resolve many issues surrounding the Davis-Besse reactor vessel head degradation, NRC management decided to implement IMC 0350, "Oversight of Operating Reactor Facilities in a Shutdown Condition With Performance Problems." Significant dates for this extended outage were as follows:

• Fuel Was Removed From the Reactor	June 26, 2002
• Entered Mode 6	February 19, 2003
• Fuel Reload Was Completed	February 26, 2003
• Entered Mode 5	March 12, 2003
• Entered Mode 4	September 13, 2003
• Entered Mode 3	September 15, 2003
• Completed the Reactor Coolant System (RCS) Normal Operating Pressure (NOP)	September 30, 2003
• Entered Mode 5	October 5, 2003
• Entered Mode 4	December 28, 2003
• Entered Mode 3	December 30, 2003
• RCS at NOP	January 5, 2004
• Entered Mode 4	January 9, 2004
• Entered Mode 3	January 26, 2004
• RCS at NOP	January 28, 2004
• Entered Mode 2	March 9, 2004
• Entered Mode 3	March 9, 2004
• Entered Mode 2	March 11, 2004
• Reactor Critical	March 11, 2004
• Zero Power Physics Testing Complete	March 12, 2004
• Entered Mode 1	March 14, 2004
• Initial Synch to the Grid	March 15, 2004
• Entered Mode 2	March 17, 2004
• Entered Mode 3	March 17, 2004
• Entered Mode 4	March 19, 2004
• Entered Mode 3	March 24, 2004
• Entered Mode 2	March 26, 2004
• Entered Mode 1	March 26, 2004
• Synch to the Grid	March 27, 2004

On March 8, 2004, the NRC approved restart of the Davis-Besse Nuclear Power Station. Key milestone dates are listed above. At the end of the inspection period the plant was at approximately 80 percent reactor power. For the entire inspection period, the Davis-Besse Nuclear Power Station was under the IMC 0350 Process. As part of this Process, augmented

resident inspection continued during the plant restart and return to power operations. The status of those inspections was included as part of this inspection report.

1. REACTOR SAFETY

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

Additional Baseline Inspection samples are documented in Section 4OA5A.6.

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The Inspectors reviewed the licensee's susceptibility to wind driven grass, weeds and other debris into the circulating water open channel which could impact the proper operation of the circulating water system and, under extreme conditions, lead to a main turbine trip. The inspectors walked down the circulating water system to physically identify items that were in close proximity to the circulating water channel and to review the licensee's action to preclude marsh grass and other flora from entering the channel. The circulating water system description and applicable sections of the USAR were reviewed for plant features designed to mitigate the consequences of circulating water channel debris entry. Additionally, the inspectors reviewed the licensee actions during response to a marsh grass event on March 6, 2004, in which circulating water pump intake screens required frequent cleaning and in which one screen was deformed because of the differential pressure caused by marsh grass and other debris loading.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial Walkdowns (71111.04Q)

a. Inspection Scope

The inspectors verified equipment alignment and identified any discrepancies that impacted the function of system components and the associated increase in risk. The inspectors also verified that the licensee had properly identified and resolved any equipment alignment problems that could cause initiating events or impact the availability and functional capability of the system. Specific aspects of this inspection included reviewing plant procedures, drawings, and the Updated Safety Analysis Report (USAR), to determine the correct system lineup and evaluating any outstanding maintenance work requests on the system or any deficiencies that would affect the ability of the system to perform its function. A majority of the inspectors' time was spent performing a walkdown inspection of the system. Key aspects of the walkdown inspection included verifying that:

- valves were correctly positioned and did not exhibit leakage that would impact their function;
- electrical power was available as required;
- major system components were correctly labeled, lubricated, cooled, and ventilated;
- hangers and supports were correctly installed and functional;
- essential support systems were operational;
- ancillary equipment or debris did not interfere with system performance;
- tagging clearances were appropriate; and
- valves were locked as required by the licensee's locked valve program.

During the walkdown, the inspectors also evaluated the material condition of the equipment to verify that there were no significant conditions not already in the licensee's corrective action system. The following two samples were inspected:

- Component Cooling Water Train 1; and
- Containment Spray Train 1.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown (71111.04S)

a. Inspection Scope

The inspectors performed a system walkdown of the accessible portions of the Low Pressure Injection System and verified the positioning of breakers and valves, appropriate labeling of components, functionality of hangers and supports, and availability of required cooling and lubricating systems. The inspectors verified acceptable material condition of system components, availability of electrical power to system components, and that ancillary equipment or debris did not interfere with system performance. The inspectors reviewed ongoing system maintenance, open system operability evaluations, and existing condition reports for issues with potential effects on the ability of the system to perform its design flow requirements. The inspectors reviewed operating procedures, Technical Specification (TS) requirements, and applicable portions of system descriptions and portions of the Updated Safety Analysis Report (USAR) to ensure the correct system lineup.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection inspections, which were focused on the availability, accessibility, and condition of fire fighting equipment, the control of transient combustibles, and the condition and operating status of installed fire barriers. The

inspectors selected fire areas for inspection based on their overall contribution to internal fire risk, as documented in the Individual Plant Examination of External Events, their potential to impact equipment which could initiate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed at the end of this report, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use, that fire detectors and sprinklers were unobstructed, that transient material loading was within the analyzed limits, and that fire doors, dampers, and penetration seals appeared to be in satisfactory condition.

The following eight areas were inspected:

- Containment, Fire Zone D;
- Control Room, Fire Area FF;
- Component Cooling Water Pump Room, Fire Area T;
- Emergency Core Cooling System Pump Room 2, Fire Area A;
- Make-up Pump Room and Decay Heat Cooler Rooms, Fire Area AB;
- Mechanical Penetration Room 1, Fire Area AB;
- Mechanical Penetration Room 3, Fire Area AB; and
- Turbine Building Elevation 585, Fire Zone II.

b. Findings

No findings of significance were identified.

1R06 Flood Protection (71111.06)

a. Inspection Scope

The inspectors reviewed the service water pipe tunnel and adjacent areas to verify the internal flooding vulnerabilities were accurately depicted in design basis documents and risk assessments; that licensee procedures were in place to address flooding; and that compensatory measures were established during maintenance activities which increased flooding potential. Specifically, the inspectors walked down the service water pipe tunnel and adjacent areas to verify that the licensee had identified all sources that could flood the areas and verified that licensee procedures adequately addressed flooding in the area.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On February 26, the inspectors observed operating crews during simulator training and attended the post-session licensee critique. The inspectors reviewed crew performance in the areas of:

- clarity and formality of communications;
- adequacy of pre-job and pre-evolution briefs;
- ability to take appropriate actions;
- procedure use;
- oversight and direction from supervisors; and
- group dynamics.

Crew performance in these areas was compared to licensee management expectations and guidelines as presented in Davis-Besse operational and administrative procedures. The following two scenarios were reviewed as one sample:

- just-in-time training for approach to criticality and zero power physics testing
- just-in-time training for synchronization to the grid and power ascension

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

The inspectors verified the licensee's appropriate handling of performance issues associated with structures, systems, and components that are important to plant safety. This inspection consisted of evaluating the following specific activities:

- licensee's work practices;
- problem solving and issue resolution;
- scoping in accordance with 10 CFR 50.65;
- the licensee's ability to appropriately classify components in accordance with 10 CFR 50.65(a)(1) or (a)(2);
- the licensee's ability to appropriately trend performance and track unavailability;
- a partial walkdown of the selected system; and
- the appropriateness of the performance criteria associated with the structure, system or component.

The sample selected by the inspectors involved the evaluation of the failure of the motor-valve FW780 due to stem/disc separation.

b. Findings

Introduction: The inspectors identified a Non-Cited Violation (NCV) of TS 6.8.1, having very low safety significance (Green) for the licensee's failure to provide adequate work control documents to safely perform the work activity for the removal of the actuator on motor-operated valve FW780 with the feedwater system at full operating pressure.

Description: On March 16, 2004, during the transition from the startup feedwater lineup to the main feedwater lineup, the licensee discovered that the main feedwater lineup would not pass flow. On March 17, 2004, the licensee concluded that the flow

obstruction was due to a stem-disc separation on motor-operated valve FW780 [Steam Generator 1 Main Feedwater Control Valve Isolation]. On March 17, 2004, the reactor was shutdown to establish the required plant conditions to facilitate the repair of this valve.

On March 17, 2004, the licensee began removal of the actuator for valve FW780. Work Order 200088406 [Remove FW780 Actuator] provided instructions to electrically determinate the valve actuator motor, install a stem locking device, and remove the actuator motor. While performing the step that removes the actuator motor, the mechanics observed that as they were removing the stem nut locknut, the stem nut was traveling out with the locknut. At this point the mechanics determined that the stem locking device was not restraining the valve stem from moving. Next, the mechanics loosened all of the actuator mounting bolts and observed that the actuator moved. The mechanics tightened the actuator mounting bolts and stopped the actuator removal activities.

On March 18, 2004, the inspectors discussed this issue with licensee senior maintenance management. The inspectors discovered that even though Work Order 200088406 had a step to "fabricate and install a clamp type locking device to keep the stem from moving when the Limitorque is removed," there was no engineering involvement in the design or fabrication of the stem locking device. Since the licensee did not know exactly where the valve stem was damaged and chose to remove the valve actuator while the feedwater system was at full operating pressure, the stem locking device was potentially the only device restraining the stem from ejecting out of the valve once the actuator was removed. The inspectors also learned that an investigation by the licensee had discovered that:

- the mechanic who fabricated the locking device did not know that it would be used to restrain the valve stem against full system pressure;
- the fact that the system would be at full operating pressure during actuator removal was not covered during the pre-job brief;
- the mechanics, working on the valve, did not verify system conditions prior to commencing the removal of the valve actuator, and therefore did not know the feedwater system was at full operating pressure;
- the mechanics removing the actuator, did not immediately notify the shift manager of a condition that involved personnel safety when they noticed the stem nut backing out with the locking nut and compounded an already unsafe condition by loosening the actuator mounting bolts.

The licensee allowed the actuator removal work to recommence after a new stem locking device was fabricated and the feedwater system was depressurized.

Procedure DB-MN-00001, "Conduct of Maintenance," Revision 10, established the administrative controls, responsibilities, and duties of personnel conducting maintenance or modifications at the Davis-Besse Nuclear Power Station. Procedure DB-DP-00007, "Control of Work," Revision 06, described the methods and responsibilities for the administrative control of activities associated with work order implementation and closure. The inspectors determined the following to be minor violations of TS 6.8.1.a

which required written procedures, which direct the performance of maintenance, be established and implemented:

- Step 6.3 of DB-DP-00007, required, in part, that a pre-job brief be conducted in accordance with Attachment 1, "Pre-Job Brief." Contrary to this, the pre-job brief did not adequately review the expected system responses and clearly identify parameter values at which actions shall be taken to stop the evolution or mitigate possible failures.
- Step 6.3 of DB-DP-00007, required, in-part, a safety verification be initiated for Orders that have clearances in accordance with Attachment 2, "Safety Verification." The purpose of the safety verification was to ensure the energy has been removed from a system or equipment before performing maintenance. Contrary to this, the workers did not perform this type of verification prior to beginning the actuator removal.

These violations were determined not to constitute an immediate safety issue and were determined to be of minor safety significance because actuator removal never progressed to the point where the valve stem was not physically restrained. These issues were not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee documented the issue in their corrective action program (CR 04-01996).

Analysis: The inspectors determined that not providing controls to ensure the adequacy of the stem locking device used to prevent stem movement during the disassembly of FW780 actuator, was a performance deficiency warranting a significance evaluation in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," issued on June 20, 2003. The inspectors determined that the finding was more than minor because, if left uncorrected, it could contribute to the likelihood of those events that upset plant stability. Specifically, the failure of the stem locking device, with the actuator removed, could have resulted in the ejection of the valve stem, resulting in a feedwater system transient and personnel injury. Utilizing the Phase 1 Screening Worksheet, per Inspection Manual Chapter 0609, "Significance Determination Process," the inspectors determined this performance deficiency impacted the Initiating Event Cornerstone because it constituted a transient initiator contributor. The inspectors answered "no" to Phase 1 Initiating Event questions because the finding: (1) was not associated with the likelihood of primary or secondary system LOCA initiation; (2) did not contribute to the likelihood that mitigation systems would be unavailable; and (3) was not associated with fire or flood. Therefore, this finding was considered to be of very low safety significance.

Enforcement: Technical Specification 6.8.1, states, in part, that written procedures shall be established, implemented, and maintained covering applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, February, 1978. Regulatory Guide 1.33 states, in part, that maintenance that can affect the performance of safety related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. On March 17, 2004, the licensee fabricated and installed a stem locking device on valve FW780, whose sole purpose was to prevent stem movement once the valves actuator was removed. Contrary to the requirements of TS 6.8.1, the licensee

failed to provide sufficient engineering guidance as part of the Work Order step which called for the fabrication of the of the stem locking device. The result was the fabrication and installation of a stem locking device that was inadequate to prevent stem movement with the feedwater system at normal operating pressure. This issue was not an immediate concern, because the licensee suspended actuator removal activities prior to removing all physical restraints that prevented possible stem ejection from the valve. Because of the very low safety significance, and because this issue 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 50-346/04-06-01). The licensee entered this issue into the corrective action program (CR 04-01996).

1R13 Maintenance Risk Assessment and Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspectors reviewed the licensee's response to risk significant activities. These activities were chosen based on their potential impact on increasing overall plant risk. The inspection verified the planning, control, and performance of the work were done in a manner to control overall plant risk and minimize the duration where practical, and that contingency plans were in place, where appropriate. The licensee's daily configuration risk assessments, observations of shift turnover meetings, observations of daily plant status meetings, and the documents listed at the end of this report were used by the inspectors to verify that the equipment configurations had been properly listed, that protected equipment had been identified and was being controlled where appropriate, and that significant aspects of plant risk were being communicated to the necessary personnel. The following 3 samples of risk significant activities were evaluated by the inspectors:

- removal from service of the Bayshore-Davis Besse 345 KV line for line maintenance;
- high vibration on the rod control motor generator; and
- reactor coolant pump motor 1-2 lower oil reservoir cover leak.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions (71111.14)

a. Inspection Scope

On March 3, 2003, the inspectors observed the control room operators perform a cooldown to a reactor coolant system temperature of approximately 480 F and pressure of approximately 1250 psig. The cooldown was performed to facilitate the repair of an oil leak on the reactor coolant pump 1-2 lower bearing oil reservoir. On March 4, 2003, the inspectors observed the subsequent heatup, post-maintenance test, and restoration of reactor coolant temperature and pressure to normal operating values.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Evaluation of Operability Evaluations Remaining Open at Restart

a. Inspection Scope

On March 8, 2004, the licensee was granted approval to restart the facility. At that time, there were 16 operability evaluations that remained open. The inspectors performed an evaluation of the aggregate impact of the conditions documented in these evaluations on the ability of plant to be operated safely and that the licensee's time line to correct the degraded conditions were appropriate

b. Findings

No findings of significance were identified.

.2 Individual Operability Evaluations

a. Inspection Scope

The inspectors selected condition reports (CRs) which discussed potential operability issues for risk significant components or systems. These CRs and applicable licensee operability evaluations were reviewed to determine whether the operability of the components or systems was justified. The inspectors compared the operability and design criteria in the appropriate sections of the TS and USAR to the licensee's evaluations of the issues to verify that the components or systems were operable. Where compensatory measures were necessary to maintain operability, the inspectors verified that the measures were in place, would work as intended, and were properly controlled.

The five issues evaluated were:

- Operability Evaluation 2003-0009, Revision 2 (addressed emergency diesel generators frequency and voltage requirements during safety features actuation loading conditions);
- Operability Evaluation 2004-0005, Revision 0 (addressed emergency diesel generators voltage requirements during a Loss of Offsite Power);
- Operability Evaluation 2004-0006, Revision 0 (addressed the High Energy Line Break function of Door 303);
- Operability Evaluation 2004-0007, Revision 0 and Revision 1 (addressed fuel peak cladding temperature for different flow throttling conditions when only 1 HPI train was available); and
- Operability Evaluation 2004-0009, Revision 0 (addressed leakage from Decay Heat Pump 2 mechanical seals).

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed post-maintenance testing activities to ensure that the testing adequately verified system operability and functional capability with consideration of the actual maintenance performed. The inspectors used the appropriate sections of the TS and the USAR, as well as the documents listed at the end of this report, to evaluate the scope of the maintenance and verify that the work control documents required sufficient post-maintenance testing to adequately demonstrate that the maintenance was successful and that operability was restored. The inspectors observed and evaluated test activities associated with the following sample:

- the replacement of the rate of change amplifier module for RPS channel 3, intermediate neutron flux NI-4

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage (71111.20)

a. Inspection Scope

On February 27, with the plant in Mode 3, the inspectors toured containment in preparation for restart of the plant. The inspectors evaluated the containment for cleanliness, and observed whether material being taken into containment was being tracked as required by licensee procedures.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed the surveillance test and/or evaluated test data to verify that the equipment tested met TSs, USAR, and licensee procedural requirements, and also demonstrated that the equipment was capable of performing its intended safety functions. The inspectors used the documents listed at the end of this report to verify that the test met the TS frequency requirements; that the test was conducted in accordance with the procedures, including establishing the proper plant conditions and prerequisites; that the test acceptance criteria were met; and that the results of the test were properly reviewed and recorded. Seven tests were sampled:

- DB-MI-03059 (RPS Channel 3 Calibration of Overpower, Power/Imbalance/Flow and Power/Pumps Trip Function, Revision 11);
- DB-OP-03013 (Containment Daily Inspection and Containment Closeout Inspection; Revision 00);
- DB-SC-03077 (Emergency Diesel Generator 2 184 Day Test; Revision 04);
- DB-SP-04159 (AFP 2 Monthly Test; Revision 01);
- DB-SC-03112 (SFAS Channel 4 Functional Test; Revision 5);
- DB-ME-03046 (D1 Bus Under Voltage Units Monthly Functional Test, Revision 5); and
- DB-SS-03042 (Control Room Emergency Ventilation System Train 2 Monthly Test; Revision 03).

b Findings

No findings of significance were identified

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed temporary modification 04-0006, "Temporary Leak Sealant Device at MS853 [Main Steam Line 1 Vent Valve]." This temporary modification was put in place to address steam leakage past the closed seat of MS853 and past the threaded pipe cap installed on the discharge nipple of the valve.

The inspectors reviewed this temporary modification and associated 10 CFR 50.59 screening against system requirements, including the USAR and TSs, to determine if there were any effects on system operability or availability and to verify temporary modification consistency with plant documentation and procedures.

b Findings

No findings of significance were identified

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

The inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action system at the appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed.

b. Findings

No findings of significance were identified.

.2 Emergency Preparedness Backlog Assessment

Introduction

As part of assessing the licensee's readiness for restart, the resident staff evaluated the licensee's ability to identify and resolve issues that were important to emergency preparedness. As part of the preparation for this inspection, the inspectors reviewed the Special Inspection Report, dated December 12, 2003, from the Indian Point 2 Station, which discussed three green findings associated with backup power supplies to their emergency response facilities.

a. Effectiveness in Problem Identification, Prioritization, and Resolution of Issues

(1) Inspection Scope

The inspectors evaluated the current state of the licensee's backlog in the areas of emergency preparedness and assessed the overall potential impact of that backlog on their ability to effectively implement their Emergency Preparedness Plan subsequent to restart.

(2) Observations and Findings

The inspectors requested a listing of backlog items associated with Emergency Preparedness issues. The licensee provided the inspectors with a list of condition reports and corrective actions for this area. The breakdown of the Emergency Preparedness issues consisted of: 15 condition reports that were still under evaluation; 71 condition reports with open corrective actions, and 107 open corrective actions.

The inspectors reviewed the condition reports and corrective actions and evaluated their impact on the licensee's ability to adequately implement their emergency preparedness plan. Additionally, the inspectors evaluated the priority of each issue assigned by the licensee and that the an appropriate due date was assigned to each issue.

Through discussions with licensee staff and review of the open condition reports and corrective actions, the inspectors did not identify any outstanding equipment issues that would significantly challenge the licensee's performance in the area of Emergency Preparedness.

(c) Conclusion

The inspectors concluded that, at the time the inspection was completed, the licensee's backlog of issues in the area of Emergency Preparedness did not provide a challenge to the licensee in implementation of their Emergency Preparedness Plan and that the issues that comprised the backlog were entered into and were being addressed appropriately by the corrective action program.

.3 Evaluation of Corrective Actions Implemented to Improve the Quality of Containment Closeout Tours

(1) Inspection Scope

The inspectors evaluated the licensee's corrective actions implemented to improve the quality of containment closeout inspections.

(2) Observations and Findings

On September 10, 2003, operations senior management personnel conducted a containment closeout inspection of the containment building to satisfy the TS surveillance requirements that required, in part, that no loose debris (rags, trash, clothing, etc.) was present that could be transported to the containment emergency sump and cause restriction of the pump suction during postulated loss of coolant accident conditions. Subsequent to this inspection, the inspectors identified debris that was not found by the licensee during their closeout.

The inspectors debriefed their findings with the licensee at the time. The licensee documented this issue in their corrective action program and corrected the deficiencies prior to final containment building closeout. This resulted in a finding of very low safety significance (Green) and a Non-Cited Violation [documented in Inspection Report 05000346/2003018].

As a direct result of this finding, the licensee developed a stand alone surveillance procedure, DB-OP-03013, "Containment Daily Inspection and Containment Closeout Inspection." This surveillance procedure was used as guidance to perform visual inspections for all accessible areas of the containment prior to establishing containment integrity and was used to meet the requirements of TS Surveillance Requirement 4.5.2.c.1 and 4.5.2.c.2.

The inspectors observed the performance of DB-OP-03013 and evaluated the results after the surveillance was performed during the time period after the procedure was developed [December 11, 2004] and reactor startup was commenced [March 9, 2004].

(3) Conclusion

The inspectors concluded that the development and implementation of the DB-OP-3013 provided the licensee staff performing the containment closeout inspections a detailed guideline on what is required to perform an acceptable containment closeout and as a result has improved the quality of the subsequent containment closeouts observed by the inspectors.

4OA3 Event Followup (71153)

Turbine Building High Energy Line Break Report Retraction

On January 19, 2004, the licensee reported, in accordance with 10 CFR 50.72(b)(3)(ii)(B), a design issue associated with the capabilities of certain

turbine building doors. The licensee discovered that certain doors may not be able to withstand the initial pressure wave caused by a postulated guillotine break of a main steam line in the turbine building. The licensee preliminary analysis indicated that the initial pressure wave could cause the failure of the doors leading to both trains of low voltage switchgear, and the resultant steam environment could potentially render all low voltage AC equipment and station batteries inoperable.

On February 20, 2004, the licensee retracted the event notification. Their retraction included the following text:

> "Further review and evaluation of this issue has determined that the pressure wave from a main steam line break in the turbine building results in a pressure of less that 1.0 psi. Therefore, the affected doors would be able to withstand the pressure wave with one exception. The one exception is the door to a high voltage switchgear room, which is different from the other doors in that it opens into the switchgear room and therefore has a very low capability to withstand a positive pressure in the turbine building. However, additional analysis determined that in the event of a main steam line break and possible failure of the door, the resultant environment in the room (i.e., temperature, pressure, and humidity) would be within the capability of the enclosed equipment, and equipment operability would not have been challenged. Accordingly, this issue is no longer considered an unanalyzed condition that would have significantly degraded plant safety, and therefore the notification made per 10CFR50.72(b)(3)(ii)(B) is retracted."

The inspectors evaluated the licensee's technical justification for this retraction. As part of this inspection, the inspectors discussed the issue with members of the licensee engineering staff and reviewed the condition reports and calculations listed in the Attachment to this report. The inspectors concluded that there was adequate technical justification to support the licensee's retraction of this event.

4OA5 Other Activities (93812)

Following restart authorization, a Special Inspection Plan was developed, using Inspection Procedure 93812 as guidance. Observations are documented below.

A. Observations of Licensee Performance During Startup and Power Ascension

On March 9, 2004 full-time on-site inspector observations of licensee plant restart activities began. This coverage consisted of a minimum of two inspectors per shift, and was typically comprised of one senior inspector and one resident inspector. The inspection period was approximately 4 weeks long and was supported by 30 inspectors. All four Regions were represented on the team, which included:

Paul Cataldo	SRI, Beaver Valley	Region 1
Scott Freeman	SRI, Sequoyah	Region 2
Steve Campbell	SRI, Fermi	Region 3
Ray Powell	SRI, Perry	Region 3
Dan Kimble	SRI, LaSalle	Region 3

Steve Ray	SRI, Braidwood	Region 3
Scott Thomas	SRI, Davis-Besse	Region 3
Brian Kemker	SRI, D.C. Cook	Region 3
Jay Lennartz	SRI, Palisades	Region 3
Desiree Smith	SRI, Dresden	Region 3
Tom Morrissey	RI, Vogtle	Region 2
Michelle Garza	RI, Palisades	Region 3
Monica Williams	RI, Davis-Besse	Region 3
John Rutkowski	RI, Davis-Besse	Region 3
Peter Snyder	RI, Byron	Region 3
John Ellegood	RI, Perry	Region 3
Carey Brown	RI, Clinton	Region 3
Tim Steadham	RI, Fermi	Region 3
Alfred Sanchez	RI, Comanche Peak	Region 4
Leonard Willoughby	RI, Ft. Calhoun	Region 4
Mike Miller	RI, River Bend	Region 4
Bruce Burgess	Branch Chief	Region 3
Tom Kozak	Branch Chief	Region 3
Eric Duncan	Branch Chief	Region 3
Tony Vegel	Branch Chief	Region 3
Dave Passehl	Project Engineer	Region 3
Steve Rose	Operator Licensing	Region 2
Keith Walton	Operator Licensing	Region 3
Chuck Zoia	Operator Licensing	Region 3
Mike Bielby	Operator Licensing	Region 3

The inspection activities were conducted in accordance with the inspection plan, "Initial Criticality and Power Ascension Team Inspection," dated February 26, 2004. The overall goal of this inspection plan was to verify the Davis-Besse Operations department's ability to conduct a safe startup and power ascension to 100 percent reactor power. Key focus areas of the inspection team were: Control Room Activities; Conduct of Pre-Evolution Briefs, Shift Turnovers, and General Communications; Management Decision Making, Support Department Performance, and General Material Condition and Housekeeping. Each area will be discussed individually.

A.1 Control Room Activities

a. Inspection Scope

The team evaluated the ability of the operating crews to perform required testing activities and safely maneuver the plant. This evaluation was performed through direct observation of the operators, document reviews, and interaction with licensed and non-licensed operators. Although the focus of this inspection was observing control room activities, some field activities were also observed. The following list contains examples of the major evolutions observed by the inspectors:

- the control of reactor coolant temperature using decay heat removal and steam generator cooling;
- the approach to criticality;

- zero power physics testing;
- power ascension/reduction;
- nuclear instrument adjustments;
- starting/stopping reactor coolant pumps;
- starting/stopping main feed water pumps;
- blocking/unblocking safety features actuation system trips;
- blocking/unblocking steam feed rupture control system trips;
- isolating/unisolating core food tanks;
- synchronization of the main generator to the electric grid;
- main generator turbine testing;
- response to feed water sodium excursion; and
- reactor shutdown and transition to Mode 4 for FW780 repair.

b. Observations and Findings

No findings of significance were identified by the Team.

The Team concluded that the overall operator performance during plant maneuvering and surveillance testing was generally good. This assessment was supported by the following observations:

- Evolutions were effectively controlled and implemented in a methodical and deliberate manner. Expected system responses to operator actions were usually discussed by the operator prior to taking the action and verified after the action was taken.
- Appropriate actions were taken by the operators to stabilize the plant when confronted with operational challenges such as; Integrated Control System problems, lowering condenser vacuum, excessive feedwater sodium, excessive feedwater silica and FW780 stem/disc separation.
- Generally good response to unexpected alarms was seen in the control room.
- Surveillance testing was often allowed to proceed in parallel with other major activities (for example, power ascension or starting feedwater pumps). The added control room briefings and communications necessary to support the additional testing, and resulting annunciator alarms which resulted from the performance of the testing, caused an additional distraction for the control room operators.
- Although the control room operators were usually very focused during the performance of high risk activities, they tended to be less formal/crisp in the conduct of communications, briefings, and alarm response during periods of low activity.

A.2 Conduct of Pre-Evolution Briefs, Shift Turnovers, and General Communications

a. Inspection Scope

The inspectors evaluated the ability of the licensee to effectively communicate, internally within the operations department and externally to the support departments, information regarding the status of equipment at the facility, scheduled activities and their associated impact on plant risk, and the manner in which maintenance and testing

activities were performed. This evaluation was performed through direct observations of personnel during shift turnovers, planning/scheduling meetings, pre-evolution and/or pre-job briefings, conduct of various evolutions, problem solving meetings, and routine control room activities.

b. Observations and Findings

No findings of significance were identified by the Team.

The Team concluded that briefings, turnovers, and general communications, were adequate to support continued safe operation of the plant. This assessment was supported by the following observations:

Pre-evolution Briefs

- Inspectors observed good briefs for the following activities: replacing the main transformer cooling fan relay; plant heat-up to Mode 3; power reduction from 12 percent to 2 percent; shutdown of the motor-driven feedwater pump; approach to criticality; zero power physics testing; power ascension to 2 percent; and power ascension from 4 percent to 14 percent power.
- Inspectors noted that individuals leading briefs in the control room were challenged by the high level of ambient noise and frequent interruptions caused by phone calls and control room alarms.
- Briefs often required large numbers of individuals to be present in the control room (for example, the brief for DB-MI-03057 (RPS channel 1 calibration activities) required 13 individuals to be present)
- Lack of consistent reverse briefing usage limited the active participation of individuals in the briefing process.

Turnovers

- The inspectors attended several shift turnover meetings. Generally the meetings were formal and professional. The inspector noted, on at least one occasion, incorrect information was discussed by the Unit Supervisor, and on several occasions, zone operators communicated incorrect status of equipment in their zone.

- The inspectors observed several control room shift turnovers. Generally, good face-to-face turnover and control board walkdowns were observed.

Communication

- Generally, the inspectors noted good shift decorum, solid repeat backs, and good 3-part communication demonstrated by operators in the control room.

- The inspectors observed that communication practices by support personnel were inconsistent. This was best illustrated by good peer checking and 3-part communication used by I&C personnel during the conduct of calibration activities

in the control room and poor 3-part communications used by back-shift Nuclear Engineers.

- The inspectors observed that control room crew updates did not follow a standard format, or the format was weak. This was highlighted when no crew updates were observed during a power increase to 60 percent, even though during previous power changes, the reactor operator had updated the crew every time he increased the unit load demand.

- The inspectors noted that, on at least three occasions, work schedule changes were not communicated effectively to the control room staff. Specifically, in one case, the Unit Supervisor was not aware that he was to give a pre-evolution brief for an activity until the technicians reported to the control room for the brief.

A.3 Management Decision Making

a. Inspection Scope

The inspectors evaluated the performance of the licensee management in the area of conservative decision making. This was done by observing managers performing their day-to-day activities in the areas of operations, work planning, scheduling, maintenance, and problem solving. The inspectors assessed whether or not the actions taken by the managers were conservative and supported the safe operation of the facility.

b. Observation and Findings

No findings of significance were identified by the Team.

The Team concluded that management decision making was adequate to support continued safe operation of the plant. This assessment was supported by the following observations:

- The inspectors observed the Shift Manager walk through changes to a plant cooldown operating procedure and proposed change to a motor-driven feedwater pump operating procedure with the on shift operating crew. As a direct result of this effort, the crew raised good questions which resulted in better procedures.

- Good initiative by the Shift Manager to use the plant simulator to model plant response during a downpower maneuver with some equipment out of service, prior to actually performing the downpower evolution.

- Operations management made a conservative decision to insert control rods, during an initial approach to criticality, when only 2 source range count doublings had occurred by a rod index of 275, even though the procedure allowed proceeding to all rods out.

- A conservative decision was made by scheduling to not sequence main turbine trip testing until at least two turbine bypass valves were available per header.

- On several occasions, the Shift Manager involved the appropriate support organizations to resolve emergent issue, instead of tasking the operating crew with troubleshooting duties.

- The inspectors noted on several occasions that effective communication was not evident between work control/scheduling and operations during the process of reviewing how some major plant activities were to be sequenced.

- The inspectors noted, on several occasions, that managers would step out of their oversight roles to perform specific tasks, such as making copies of alarm response procedures, providing peer checks for activities they were overseeing, or physically going into the plant to identify components that were worked as planned maintenance activities.

- Inspectors noted, on several occasions, that zone operators presented incorrect information at the shift turnover meetings. The inspectors did not see a positive response by the managers present to challenge these individuals on why they were not providing accurate information.

A.4 Support Department Performance

a. Inspection Scope

The Team evaluated the effectiveness of the licensee's support organizations and their ability to support operations during initial reactor startup and power ascension to full power operations. This was primarily accomplished through direct observation of plant staff during work planning activities, pre-evolution briefs, morning status meetings, problem solving and decision making teams, and during the performance of work activities. The inspectors also reviewed applicable documentation which included condition reports, corrective actions, daily risk assessments, work schedules, problem solving plans, and daily meeting packages.

b. Observation and Findings

Although the Team noted one specific example (see Section 1R12 of this report) of poor performance in this area, they concluded that the overall performance of the support organizations was adequate to support continued power operations. This assessment was supported by the following observations:

- The inspectors noted that there were generally good discussions between engineering/maintenance and control room staff regarding the scope of maintenance activities or planned evolutions and the impact of those activities on plant equipment and TS action statements. Specific examples of these positive interactions were during integrated control system (ICS) troubleshooting and day shift nuclear engineering support of reactivity changes during physics testing and power ascension.

- During turnover, Operations generally received good support from the Engineering and Maintenance departments for the resolution of plant equipment issues.

- During a tour of the Auxiliary Building, the inspector observed questionable radaition worker practices during filter change-out (CR 04-02363). This issue was discussed with a radiation protection supervisor and the Radiation Protection Manager. Appropriate actions were taken by the licensee. The job was stopped, the work site was surveyed, workers were questioned, and a condition report was written.

- Poor planning or review of scheduled work activities caused a number of jobs to be delayed or canceled.

- The inspectors observed several occasions where the Problem Solving Decision Making process was utilized to resolve an emergent issue. The inspectors noted that the process was generally effective when used but was not implemented in a consistent manner.

- Inconsistent communications to the control room staff regarding on-going field maintenance activities.

- Inconsistent communications to the control room staff regarding emergent work schedule changes.

- On three separate occasions, inspectors identified mobile carts that were not sufficiently secured in areas that required the carts to be secured if left unattended.

- On one occasion, the inspectors discovered a technician asleep in a posted radiation area.

A.5 General Material Condition and Housekeeping

a. Inspection Scope

The Team assessed the general material condition and cleanliness of the auxiliary building and turbine building through focused walkdowns of selected areas. Where deficiencies were noted, the inspectors verified that the licensee had taken appropriate action, per the applicable procedure, to develop corrective actions to address the deficiency.

b. Observations and Findings

No findings of significance were identified by the Team.

The Team concluded that the material condition and general housekeeping was good. This assessment was supported by the following observations:

- The inspectors noted that plant cleanliness was very good. Plant areas/components that were specifically mentioned included the emergency diesel generator rooms, the main feedwater pumps, and the main steam isolation/relief valve areas.

- The Inspectors observed a large number of deficiency tags during their focused area walkdowns. Although the Team did not observe any significant issues that were not already captured in the licensee's work control or corrective action program, they noted that working off the backlog of work items needed to be a continued focus of licensee management.

- The inspectors noted boric acid residue on some components located in the auxiliary building. The inspectors confirmed that the licensee had properly implemented their boric acid corrosion control procedure for several of these components.

A.6 Inspection Samples

During the conduct of observation of restart activities, the inspectors performed the following specific inspection samples utilizing the applicable baseline inspection procedure. No findings of significance were identified during these inspections.

a. Fire Protection (71111.05Q)

The inspectors conducted fire protection inspections, which were focused on the availability, accessibility, and condition of fire fighting equipment, the control of transient combustibles, and the condition and operating status of installed fire barriers. The following three samples were evaluated:

- Zone S [High Voltage Switchgear Room A];
- Zone Q [High Voltage Switchgear Room B]; and
- Zone DD [Cable Spreading Room].

b. Fire Protection (71111.05A)

The inspectors responded to a plant announcement of a fire alarm in Room 517, Non-Rad Waste Ventilation Room. The Fire Brigade reported no sign of fire, but noted all supply fans were found tripped. The inspectors assessed the response of the fire brigade, the immediate actions taken by the fire brigade to assess the cause of the alarm, and the post response critique.

c. Operator Workarounds (71111.16)

The following 2 samples were evaluated:

- The inspectors performed an assessment of the aggregate impact of current level 1 and 2 operator workarounds; and

- The inspectors reviewed the existing operator workaround needed to compensate for leak-by valve DH 2733 [Decay Heat Pump 1 Suction] and DH 2734 [Decay Heat Pump 2 Suction].

d. Post Maintenance Test (71111.19)

The inspectors reviewed post-maintenance testing activities to ensure that the testing adequately verified system operability and functional capability with consideration of the actual maintenance performed. The following eight samples were evaluated:

- Functional Test Following the Replacement of the Linear Amplifier for the Top Linear Amplifier in RPS channel 2. This was done using DB-MI-03058; RPS Channel 2 calibration of Overpower, Power/Imbalance/Flows, and Power/Pumps Trips function; Revision 12, per Work Order 200087806;
- DB-SS-04052; MFPT 1 Stop Valves Periodic Tests; Revision 01;
- DB-SS-04054; Emergency Overspeed Governor; Revision 01;
- Integrated Control System module 5-3-11 replacement for SP6A/7A per Work Order 200089335;
- Packing adjustment and airset testing on SP13A2 per Work Order 200089375;
- Functional Test of RPS channel 1 (DB-MI-03057) per Work Order 20089295;
- Functional Test of RPS channel 4 (DB-MI-03760) per Work Order 200089350; and
- Leak Test and Motor Operated Valve Test Following the Disc Repair of FW 780.

e. Surveillance Testing (71111.22)

The inspectors observed the surveillance test and/or evaluated test data to verify that the equipment tested met TS, USAR, and licensee procedural requirements, and also demonstrated that the equipment was capable of performing its intended safety functions. The following 21 samples were evaluated:

- DB-MI-03011; Channel Functional Test of Reactor Trip Breaker B, RPS Channel 1 Reactor Trip Module Logic, and Arts Channel 1 Output Logic; Revision 06;
- DB-MI-03013; Channel Functional Test of Reactor Trip Breaker D, RPS Channel 3 Reactor Trip Module Logic, and ARTS Channel 3 Output Logic; Revision 07;
- DB-MI-03017; RPS Channel 1 Power/Imbalance/Flow Trip Setpoint Verification and Overpower Trip Setpoint Adjustment/Verification; Revision 02;
- DB-MI-03019; RPS Channel 3 Power/Imbalance/Flow Trip Setpoint Verification and Overpower Trip Setpoint Adjustment/Verification; Revision 03;
- DB-MI-03020; RPS Channel 4 Power/Imbalance/Flow Trip Setpoint Verification and Overpower Trip Setpoint Adjustment/Verification; Revision 02;
- DB-MI-03461; Channel Functional Test of 78A-ISN102 Source Range Neutron Flux and Rate to RPS Channel 1; Revision 04;
- DB-MI-03462; Channel Functional Test of 78A-ISN101 Source Range Neutron Flux and Rate to RPS Channel 2; Revision 04;
- DB-MI-03463; Channel Functional Test of 78A-ISN104 Intermediate Range Neutron and Rate in RPS Channel 3; Revision 03;

- DB-MI-03464; Channel Functional Test of 78A-ISN103 Intermediate Range Neutron and Rate in RPS Channel 4; Revision 03;
- DB-MI-04035; RPS Channel 1 Scaled Differential Amplifier Gain Adjustment; Revision 02;
- DB-MI-05253; Nuclear Instrumentation NI06 (RPS CH1) Power Range Adjustment; Revision 03 and 04;
- DB-MI-05255; Nuclear Instrumentation NI08 (RPS CH3) Power Range Adjustment; Revision 03 and 04;
- DB-NE-03212; Zero Power Physics Testing; Revision 04 (Attachment 6: Temperature Coefficient of Reactivity With All Rods Out; Attachment 7: Deboration to Zero Rod Index);
- DB-NE-04276; Power Imbalance Detector Correlation Test; Revision 05;
- DB-SP-03357; RCS Water Inventory Balance; Revision 5;
- DB-SC-03111; SFAS Channel 2 Functional Test; Revision 08;
- DB-SC-03164; Channel Functional Test of manual Reactor Trip; Revision 02;
- DB-SC-03223; Quarterly Functional Test of RE 5052 A, B, and C, Containment Purge Exhaust Radiation Monitor; Revision 3;
- DB-SP-03357; RCS Water Inventory Balance; Revision 05;
- DB-SS-04161; Power/Load Unbalance Test; Revision 03; and
- DB-SS-04163; Main Turbine Overspeed Trip Test; Revision 04.

A.7 Initial Criticality and Power Ascension Team Inspection Overall Conclusion

The overall conclusion for this inspection was based on the performance of the licensee for the time period covering March 9, 2004 through March 31, 2004. At the end of that time period, reactor power was approximately 80 percent. Around the clock coverage continued until the reactor was at 100 percent power and was discontinued April 4, 2004.

This 30 person inspection team, although primarily focused on the performance of the Operations department, was also able to evaluate how the other on-site departments functioned to support the operation of the facility. During the 24 day evaluation period, the Team observed 18 operational Mode changes; observed the performance of over 40 major Operation's lead evolutions and performed approximately 34 baseline inspection activities.

The Team noted both strengths (control of operational evolutions by the on-shift crews and the general material condition of the facility), and weaknesses (support organizations effectively supporting the Operations department). Although the licensee demonstrated improving performance in a number of areas, the Team observed that the licensee still demonstrated inconsistent performance in areas such as pre-evolution briefs, peer checking, 3-part communication, control room alarm response, crew updates and briefs, and shift turnovers.

The team concluded that the overall performance of the licensee was adequate to support continued safe operation of the facility.

4OA6 Meetings

The inspectors presented the inspection results to Mr. M. Bezilla, and other members of licensee management on April 9, 2004. The licensee acknowledged the findings presented. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Allen, Plant Manager
M. Bezilla, Site Vice President
G. Dunn, Manager, Regulatory Affairs
J. Grabnar, Manager, Design Engineering
W. Mugge, Manager, Work Week Management
L. Myers, Chief Operating Officer, FENOC
K. Ostrowski, Manager, Plant Operations
J. Powers, Director, Nuclear Engineering
R. Schrauder, Director, Support Services
M. Stevens, Director, Maintenance

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000346/2004-006-01	NCV	Inadequate Design Control for FW780 Stem Locking Device

LIST OF DOCUMENTS REVIEWED

1R01 Adverse Weather Protection

System Description for Circulating Water System: Revision dated August 15, 1995

CR 04-01764; Lack of Explicit Guidance for Shutdown Criteria for the Circulating Water Pumps

CR 04-01761; Circulating Water Pump #4 Intake Screen Bent

USAR Section 2.0; Site Characteristics

1R04 Equipment Alignment

DB-OP-06262; Component Cooling Water System Procedure; Revision 08

DB-OP-06013; Containment Spray System; Revision 09

DB-OP-06012; Decay Heat and Low Pressure Injection System Operating Procedure; Revision 17

Operational Schematic OS-004; Decay Heat Removal/Low Pressure Injection System; Revision 36

Operational Schematic OS-005; Containment Spray System; Revision 07

Operational Schematic OS-021 SH 1; Component Cooling Water System; Revision 31

P&ID M-033B; Decay Heat Train 1; Revision 43

P&ID M-033C; Decay Heat Train 2; Revision 19

CR 04-02053; Two Oil Leaks on Decay Heat Pump #2

CR 04-02072; S442A #2 DH Pump Cyclone Separator Has Active Boric Acid Leak

CR 04-02094; DH Pump #2 Mechanical Seal Exhibiting Active Leakage

1R05 Fire Protection

Fire Hazards Analysis Report

PFP-AB-328; Component Cooling Water Heat Exchanger and Pump Room; Revision 03

Drawing A-221F; Fire Protection General Floor Plan Elevation 545’ 0 & 555’ 0"; Revision 7

Drawing A-222F; Fire Protection General Floor Plan Elevation 565’ 0"; Revision 12

Drawing A-223F; Fire Protection General Floor Plan Elevation 585' 0"; Revision 16

Drawing A-225F; Fire Protection General Floor Plan Elevation 623' 0"; Revision 13

Akzo Noble Material Safety Data Sheet 16-084461 for Fyrquel EHC; Revision 07

Plant Floor Plan AB-505; Control Room and Adjacent Areas; Revision 05

1R12 Maintenance Effectiveness

CR 04-01943; No Feedwater Flow to Steam Generator on Demand

CR 04-01996; Possibility of Ejection of FW780 Stem

CR 04-02019; Violation of NOP-WM-1001, Failure to Route MOV Order to Engineering

WO 200088406; Remove FW780 Actuator

Immediate Investigation; Attempted Removal of FW780 Motor Operator, WO 200088406; dated March 24, 2004

Handout FW780 Issue Human Performance Stand-Down; March 26-29, 2004

1R13 Maintenance Risk and Emergent Work

CR 04-01656; RCPM 1-2 (MP 36-2) Lower Bearing Oil Leak

Problem Solving Decision Making Problem Solving Plan; Reactor Coolant Pump Motor 1-2 Lower Oil Reservoir Found Low; Revisions 00 and 01

Problem Solving Plan; Vibrations on MG5490, CRD Motor Generator Set, have increased above the Alert level (CR 04-01344)

System Control Center Clearance Control 04-687; Bayshore-Davis Besse 345 KV; February 19, 2004

Problem Solving Plan; No Feedwater Flow to Steam Generator 1 on Demand; dated March 17, 2004

1R14 Personnel Performance During Nonroutine Plant Evolutions

DB-OP 06005; RC Pump Operation; Revision 13

DB-OP-06900; Plant Heatup; Revision 25

DB-OP-06903; Plant Shutdown and Cooldown; Revision 15

CR 04-01687; Pressurizer Level Increased to 87 Inches During RCS Depressurization

1R15 Operability Evaluations

OE 02-0037; Diesel Fire Pump Can Not Be Properly Cooled During Forebay Temperatures in excess of 82 F or When Attempting to Pump an Ice/Water Slurry

OE 03-0006; Decay Heat Pump 1 Vibration Levels Higher Than Normal

OE 03-0009; EDG 1 and 2 Do Not Meet USAR Requirements During Integrated SFAS Testing

OE 03-0015; Tornado Differential Pressure and Seismic Analysis of Masonry Walls in the Auxiliary Building

OE 03-0016; The Station Batteries 2N and 2P have Cells with Degraded Positive End Plate Supports

OE 03-0019; EDG Fuel Oil Tank 2 Transfer Pump Motor has Low Insulation Resistance

OE 03-0021; CAC SW Piping Design Temperature and Transient Loads

OE 03-0023; SW Vent Fan 3 is Operating a 111 percent Full Load Amps

OE 03-0032; SW Flow Requirements, Formal Design Basis for SW flow to CREVS, Calculations, Procedures, and Instrumentation

OE 03-0039; Decay Heat 13A, 13B, 14A and 14B Seat Leakage

OE 03-0042; Diesel Generators 1 and 2 tubing clamps installed incorrectly

OE 03-0043; DH61, DH Pump 1 Discharge to Make-up and Purification and Spent Fuel Pool Demineralizer Isolation Valve Leakby

OE 04-0003; There is a Void in the Floor at the Base of Door 428, the Entrance to Low Voltage Switchgear Room 1.

OE 04-0004; DB-SP-03218 and DB-SP-03219 (HPI Pump 1 and 2 Quarterly Tests) Acceptance Criteria Needs to be Revised to Reflect the New Recirculation Flow Requirements Prior to Operations Performing These Surveillance Tests.

OE 04-0005; EDG 1 and 2 do not Meet USAR Requirements During a LOOP

OE 04-0007; Reevaluation of Current Peak Cladding Temperature for the Full Spectrum of SBLOCA

CR 03-08441; Aggregate Impact of Open Operability Evaluations

OE 04-0009; Leakage from mechanical seals of Decay Heat Pump 2

CR 04-01050; HPI Minimum Recirculation Flow Documentation

CR 04-01711; Flow Deficit for Cold Leg Pump Discharge Line Break

1R19 Post-Maintenance Testing

DB-PF-09302; Testing Motor Operated Valves; Revision 04

DB-MI-03453; Channel Calibration of 78A-ISNI04 Intermediate Range Neutron Flux and Rate to RPS Channel 3; Revision 04

DB-MI-03463; Channel Functional Test of 78A-ISNI04 Intermediate Range Neutron Flux and Rate to RPS Channel 3; Revision 03

CR 04-01610; Failed Test, DB-MI-03463

CR 04-01943; No Feedwater Flow Indicated Through FW780 and SP6B

WO 200085490; Module Voltage Out of Tolerance

WO 200088337; Replace FW780 Bonnet Assembly w/Disc

1R20 Refueling and Outage

DB-OP-6901, Attachment 1; Containment Closeout Tour Checklist; Revision 14

1R22 Surveillance Testing

DB-ME-03046; D1 Bus Under Voltage Units Monthly Functional Test; Revision 05

DB-MI-03059, RPS Channel 3 Calibration of Overpower, Power/Imbalance/Flow and Power/Pumps Trip Function; Revision 11

DB-OP-03013; Containment Daily Inspection and Containment Closeout Inspection; Revision 00

DB-SC-03077; Emergency Diesel Generator 2 184 Day Test; Revision 4

DB-SC-03113; SFAS Channel 4 Functional Test; Revision 05

DB-SS-03042; Control Room Emergency Ventilation System Train 2 Monthly Test; Revision 03

Drawing E-3; 4.16KV Metering and Relaying One Line Diagram; Revision 34

Drawing E-22, Sheet 2; 4.16KV Relay and Metering Three Line Diagram Bus D1 & D2; Revision 23

CR 04-01670; PCR: DB-ME-03046 - Enhancement

USAR 9.4.1; Air Conditioning, Heating, Cooling and Ventilation System, Control Room

1R23 Temporary Modification

DB-MM-09067; Temporary Leak Sealing; Revision 07

NG-EN-00313; Control of Temporary Modifications; Revision 04

Temporary Modification 04-0006; Temporary Leak Sealant Device at MS853; dated March 5, 2004

CR 04-00837; MS853 Valve and Cap Leakby

Temporary Leak Sealing Notification; MS853, Main Steam Line 1 Vent Valve; dated February 27, 2004

4OA2

DB-OP-03013; Containment Daily Inspection and Containment Closeout Inspection; Revision 00

DB-OP-06900; Plant Heatup; Revision 25

4OA3

CR 04-00478; Main Steam Line Break Potential Significant Effects

CR 04-00512; MS Line Break and the Effects on Control Room Ventilation

C-NSA-000.02-011; Turbine Building HELB Environments; Revision 01

C-NSA-000.02-014; High Voltage Switchgear Past Operability Due to Turbine Building High Energy Line Break; Revision 00

4OA5 Other Activities

DB-DP-00007; Control of Work; Revision 06

DB-MI-03011; Channel Functional Test of Reactor Trip Breaker B, RPS Channel 1 Reactor Trip Module Logic, and Arts Channel 1 Output Logic

DB-MI-03017; RPS Channel 1 Power/Imbalance/Flow Trip Setpoint Verification and Overpower Trip Setpoint Adjustment/Verification; Revision 02

DB-MI-03020; RPS Channel 4 Power/Imbalance/Flow Trip Setpoint Verification and Overpower Trip Setpoint Adjustment/Verification; Revision 02

DB-MI-3058; RPS Channel 2 Calibration of Overpower, Power/Imbalance/Flow, and Power/Pumps Trips Functions; Revision 12

DB-MI-03461; Channel Functional Test of 78A-ISN102 Source Range Neutron Flux and Rate to RPS Channel 1; Revision 04

DB-MI-05253; Nuclear Instrumentation NI06 (RPS CH1) Power Range Adjustment; Revision 03 and 04

DB-MI-05254; Nuclear Instrumentation NI05 (RPS CH2) Power Range Adjustment; Revision 03 and 04

DB-MI-05255; Nuclear Instrumentation NI08 (RPS CH3) Power Range Adjustment; Revision 03 and 04

DB-MI-05256; Nuclear Instrumentation NI07 (RPS CH4) Power Range Adjustment; Revision 03

DB-MN-00001; Conduct of Maintenance; Revision 10

DB-MM-09231; Maintenance and Repair of Limitorque Valve Actuators Tupes SMB-0 through SMB-4; Revision 03

DB-NE-03212; Zero Power Physics Testing; Revision 04

DB-NE-03230; RPS Daily Heat Balance Check; Revision 03

DB-NE-03222; Determination of Hot Channel Factors; Revision 01

DB-NE-04276; Power Imbalance Detector Correlation Test; Revision 05

DB-NE-06202; Reactivity Balance Calculations; Revision 04

DB-NE-06202 Attachment 2; Estimated Critical Boron Concentration - Section 6; dated December 9, 2003

DB-NE-06202 Attachment 2; Estimated Critical Boron Concentration - Section 6; dated March 10, 2004

DB-NE-06202 Attachment 1; Estimated Critical Rod Position - Section 5; dated March 11, 2004

DB-OP-06005; RC Pump Operation; Revision 13

DB-OP-06014; Core Flooding System Procedure; Revision 08

DB-OP-06202; Turbine Operating Procedure; Revision 08

DB-OP-06203; Moisture Separator - Reheater Operating Procedure - Revision 04

DB-OP-06225; MDFP Operating Procedure; Revision 08

DB-OP-06227; Low Pressure Feedwater Heaters; Revision 05

DB-OP-06301; Generator and Exciter Operating Procedure; Revision 08

DB-OP-06900; Plant Heatup; Revision 25

DB-OP-06900; Plant Heatup; Revision 26

DB-OP-06901; Plant Startup; Revision 12, 14, 15, 16, 18, and 19

DB-OP-06902; Power Operations; Revision 11 and 12

DB-OP-06903; Plant Shutdown and Cooldown; Revision 15

DB-OP-06904; Shutdown Operations; Revision 16

DB-OP-06912; Approach to Criticality; Revision 05 and 06

DB-PF-05010; Electrical Circuit Functional Test; Revision 06

DB-PF-09301; Preventive Maintenance for Type SMB and SMC Limitorque Operators

DB-SC-03111; SFAS Channel 2 Functional Test; Revision 08

DB-SS-04161; Power/Load Unbalance Test; Revision 03

DB-SS-04163; Main Turbine Overspeed Trip Test; Revision 04

DB-SP-03357; RCS Water Inventory Balance; Revision 05

NOP-OP-1005; Shutdown Safety; Revision 05

CR 04-01687; Pressurizer Level Increased to 87 Inches During RCS Depressurization

CR 04-01786; DB-OP-03006 Missing BWST Level Channel Check

CR 04-01805; CRD Rod 2-1 Relative Position Reading 15 percent With Rod Fully Inserted

CR 04-01810; Group 2-7 Control Rods Inserted During Approach to Criticality

CR 04-01834; Documentation of Mode 2 Readiness Review Meeting Action Items

CR 04-01868; Sensible Heat Was Lower Than Expected

CR 04-01882; NRC Concern Over Gang Box Secured Near Personnel Hatch

CR 04-01884; NRC Debrief of Observed Items

CR 04-01889; HP24 Boric Acid Leakage

CR 04-01891; Protected Train Sign Posting Missing From EO-10, Protected Train Room Posting

CR 04-01895; HPI Pumps 1 and 2 Have Different Site Glass Level Marks for Inboard Bearing Oil Level

CR 04-01896; Potential Error Likely Situation

CR 04-01903; NRC Resident Debrief Items From 3/14/04

CR 04-01905; NRC Inspector Debrief Items from 3/14/04 at 2315

CR 04-01960; Feedwater Sodium Excursion

CR 04-01967; PYSP13A2 Transistor Dislodged

CR 04-02255; Feedwater System Transient

CR 04-02270; Approximately 6000 Gallon of Condensate Lost During Polisher Precoat

CR 04-02299; Ladder Not Properly Stored Inside MWDT Room, A Locked High Radiation Area

CR 04-02303; C&A: Roll-Up of Issues Identified in Submittals to the NRC

CR 04-02363; Potential Radiological Performance Issues During Changeout of Duratek Filters

Problem Solving Plan; Termination of Approach to Criticality; dated March 10, 2004

Problem Solving Plan; March 16, 2004 Feedwater Sodium Excursion; dated March 17, 2004

Problem Solving Plan; Seal Leakage of Decay Heat Pump #2; dated March 25, 2004

WO 200087806; Replace Power Range Top Ion Chamber Linear Amplifier for NI-5

10 CFR 50.59 Evaluation; MDFP Operating Procedure Changes Related to New Configuration Alignment of the MDFP in Mode 4

LIST OF ACRONYMS USED

ADAMS	Agency-wide Document Access and Management System
AFP	Auxiliary Feedwater Pump
AFW	Auxiliary Feedwater
ARTS	Anticipatory Reactor Trip System
ATC	At the Controls
CFR	Code of Federal Regulations
CR	Condition Report
CRDM	Control Rod Drive Mechanism
CSP	Containment Spray Pumps
D/P	Differential Pressure
ECCS	Emergency Core Cooling System
EHC	Electro Hydraulic Control
FENOC	FirstEnergy Nuclear Operating Company
HPI	High Pressure Injection
ICS	Integrated Control System
ILRT	Integrated Leakage Rate Test
IMC	Inspection Manual Chapter
IR	Inspection Report
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
LPI	Low Pressure Injection
MDFP	Motor Driven Feedwater Pump
NCV	Non-Cited Violation
NI	Nuclear Instrumentation
NOP	Normal Operating Pressure
NOT	Normal Operating Pressure
NRC	United States Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
OE	Operability Evaluation
PARS	Publicly Available Records
PDF	Procedure Deficiency Form
PSDM	Problem Solving and Decision Making
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RO	Reactor Operator
RPM	Radiation Protection Manager
RPS	Reactor Protection System
SDP	Significance Determination Process
SE	Shift Engineer
SFAS	Safety Features Actuation System
SFPHX	Spent Fuel Pit Heat Exchanger
SRO	Senior Reactor Operator
SW	Service Water
TBV	Turbine Bypass Valve
TS	Technical Specifications
USAR	Updated Safety Analysis Report
WO	Work Order