

January 28, 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 05000346/2003025

Dear Mr. Myers:

On December 31, 2003, 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 January 13, 2004, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. 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. Even though the Reactor Oversight Process had been suspended at the Davis-Besse Nuclear Power Station, it was used as guidance for inspection activities and to assess findings.

In addition to documenting the results of the inspection activities conducted by inspectors at Davis-Besse during this time period, this integrated resident inspection report will be used to document the closure of Davis-Besse Restart Checklist Item 5.d, "Test Program Development and Implementation." The Davis-Besse Oversight Panel has reviewed and discussed this Checklist Item and approved its closure. This item was discussed and closed in this report, as documented in Section 4OA5.

In addition, the report documents one self revealed finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it is 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, 801 Warrenville Road, Lisle, IL 60532-4351; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-001; and the NRC Resident Inspector at Davis-Besse.

In accordance with 10 CFR 2.790 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 05000346/2003025  
w/Attachment: Supplemental Information

cc w/encl: The Honorable Dennis Kucinich  
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Manager - Regulatory Affairs  
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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-346

License No: NPF-3

Report No: 05000346/2003025

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Davis-Besse Nuclear Power Station

Location: 5501 North State Route 2  
Oak Harbor, OH 43449-9760

Dates: November 16, 2003 through December 31, 2003

Inspectors: S. Thomas, Senior Resident Inspector  
J. Rutkowski, Resident Inspector  
M. Salter-Williams, Resident Inspector  
S. Campbell, Fermi Senior Resident Inspector  
M. Bielby, Senior Operations Engineer

Approved by: Christine A. Lipa, Chief  
Branch 4  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000346/2003025; 11/16/2003 - 12/31/2003; Davis-Besse Nuclear Power Station; Refueling and Outage Activities

This report covers a 7 week period of resident inspection. The inspection was conducted by resident and region based inspectors. One Green finding associated with one Non-Cited Violation 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: Mitigating Systems**

Green. A finding of very low safety significance was self-revealed when, in preparation for electrical testing of the motor on valve CC 1328, Component Cooling Water (CCW) to CRD Booster Pump 1 Suction, the licensee hung a clearance that de-energized the valve and left the valve in the open position without the knowledge of the control room personnel for approximately 6 hours. This rendered the valve incapable of automatically closing in the event of an SFAS Level 4 close signal which caused the CCW Train 1 to be inoperable. Failure to maintain the proper status of Technical Specification equipment is a violation of plant procedures required by Technical Specification 6.8.1., "Procedures and Programs."

The finding was more than minor because it involved the human performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

### B. Licensee Identified Findings

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

## 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 on June 26, 2002;
- entered operational Mode 6 on February 19, 2003;
- fuel reload was completed on February 26, 2003;
- entered operational Mode 5 on March 12, 2003;
- entered operational Mode 4 on September 13, 2003;
- entered operational Mode 3 on September 15, 2003;
- completed the normal operating pressure test for the reactor coolant system (RCS) and started cooldown to operational Mode 5 on September 30, 2003; and
- entered operational Mode 5 on October 5, 2003.

On December 26, 2003, the licensee started two reactor coolant pumps (RCP) in preparation for heating up for Mode ascension. On December 28, 2003, the licensee entered Mode 4. On December 30, 2003, the licensee entered Mode 3. At the end of the inspection period the Unit was in Mode 3 with the RCS at approximately 300 degrees Fahrenheit and 460 psig and was maintaining those conditions at the direction of Davis-Besse management.

For the entire inspection period, the Davis-Besse Nuclear Power Station was under the IMC 0350 Process. As part of this Process, several additional team inspections continued. The status of those inspections will not be included as part of this inspection report, but upon completion, each will be documented in a separate inspection report which will be made publicly available on the NRC website.

### **1. REACTOR SAFETY**

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

#### 1RO1 Adverse Weather Protection (71111.01)

##### a. Inspection Scope

The inspectors reviewed relevant procedures and performed specific plant walkdowns to verify that safety-related plant equipment was protected from seasonal-related risks. Additionally, where applicable, compensatory actions were also evaluated to be present and effective. The issues evaluated included:

- Heat trace and freeze protection system degradation and aging; and
- Heat trace operation and maintenance activities.

As well as focusing on specific safety-related systems, the inspectors evaluated the broader potential impact of these issues on numerous safety-related systems.

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 would cause initiating events or impact the availability and functional capability of the mitigating 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:

- High Pressure Injection Pump 1; and
- Decay Heat Train 2.

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 Service Water System. The inspectors reviewed ongoing system maintenance, open system operability evaluations, Mode ascension lineup preparations, the current system health report as prepared for maintenance rule considerations, the status of recent modifications to the system, 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, TS requirements, and applicable portions of system descriptions and portions of the Updated Safety Analysis Report (USAR) to ensure the correct system lineup. 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 Operability Evaluation 03-0032, Revision 2, that evaluated flow balance testing anomalies and flowrates less than what was specified as the acceptance criteria in the testing procedure.

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 three areas were inspected:

- Fire Zone K; Emergency Diesel Generator 1 Room and Upper Level;
- Feedwater Pump Room; and
- Circulating Water Pump House.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)



.1 Annual Operating Test Results

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of Job Performance Measure (JPM) operating tests and simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee during calendar year 2003. The licensee completed the annual operating examination on December 20, 2003. The overall results were compared with the significance determination process in accordance with NRC Manual Chapter 0609I, "Operator Requalification Human Performance Significance Determination Process (SDP)."

b. Findings

No findings of significance were identified.

.2 Resident Inspections

a. Inspection Scope

On November 26, 2003, and December 4, 2003, the inspectors observed operating crews during simulator annual requalification and attended the post-session licensee critique and presentation of examination results. 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 two scenarios reviewed included:

- Small cold leg break with loss of makeup pumps with failure of automatic actuation of the Steam Feedwater Rupture Control System (SFRCS); and
- High seal injection flow with subsequent RCP high vibrations leading to a seal failure and small break loss of coolant accident with failure of one output module of the Safety Feature Actuation System.

b. Findings

No findings of significance were identified.

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 four samples of risk significant activities were evaluated by the inspectors:

- Orange risk configuration due to draining of the Train 1 suction line from the Borated Water Storage Tank to support an Engineered Core Cooling System Train 1 outage on November 17, 2003;
- Orange risk configuration to support a Makeup Pump 1 outage during a time when Makeup Pump 2 and High Pressure Injection Pump 2 were also out of service or unavailable on December 2, 2003;
- Orange risk condition due to draining the RCS to 26 inches in the pressurizer to support work activities associated with the work on a pressurizer safety relief valve and level indication isolation valves on December 5, 2003; and
- Excessive leakage on the body to bonnet of valve FW 1009 [Motor Driven Feed Pump to Main Feedwater Discharge Check], which necessitated shutdown of the Motor Driven Feed Pump and caused the licensee to consider use of the Startup Feedwater Pump to continue plant heatup on December 29, 2003.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

a. Inspection Scope

The inspectors completed one sample this inspection period. The inspectors reviewed the performance of the control room operators and their oversight management during the RCS draindown to a level of approximately 28 inches in the pressurizer [approximately 32 feet above reactor loop nozzles centerline]. Additionally, the inspectors observed the pre-evolution briefs and reviewed the contingency plan that was in effect during the draining evolution. The licensee conducted a draindown to facilitate the replacement of an RCS safety valve and repacking of several valves. During the draindown the licensee declared an Orange risk condition, which was consistent with their shutdown risk procedure. The declaration of an Orange risk required the development and implementation of a contingency plan to control activities that might

further aggravate existing risk. The licensee remained in a declared Orange risk condition for the entire duration of the time in the reduced inventory condition although their procedures would have permitted a lower risk classification during portions of the evolution.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors selected two 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 two issues evaluated were:

- Operability Evaluation 2003-019, Revision 2, [Emergency Diesel Generator Fuel Oil Transfer Pump 1-2 and Feed Cable Low Insulation Values]; and
- Operability Evaluation 2003-0038, [Use of Mobil Heavy Medium Oil Instead of Mobil 12-M (light weight oil) in DH Pump 1 inboard bearing.]

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors completed one sample this inspection period. The inspectors reviewed the existing operator workaround needed to compensate for leak-by in valve DH 2733 [Decay Heat Pump 1 Suction]. During the inspectors' review, the increase in the Containment Spray Pump suction pressure, due to DH 2733 leak-by, was approximately 5 psig per hour and the operators vented the system at approximately 4 to 6 hour intervals. The review included the impact of the workaround on the functional capability of the decay heat system and the containment spray system and if the workaround impacted the operators' ability to respond to other events in Modes 5 and 4 while core cooling was being provided by the decay heat system. Additionally, the inspectors reviewed the rate of pressure increase seen in the containment spray system to review if the workaround adversely impacted other required auxiliary operator duties.

b. Findings

No findings of significance were identified.

1R17 Permanent Modifications (71111.17A)

a. Inspection Scope

The inspectors evaluated one sample of a permanent plant modification this inspection period:

- Engineering Change Package 03-0569-00; Correct SFRCS Logic to Prevent Block on Restoration of Power.

The inspectors reviewed the modification during installation and testing to verify that the design basis, licensing basis, and performance capability of the SFRCS was not degraded by the installation of the modification. The inspectors evaluated the design adequacy of the modification by performing a review of the modification's impact on control signals that would be generated under specific accident conditions and that the testing adequately verified proper response of the SFRCS logic cards after modification. The inspectors witnessed a portion of the post modification testing designed to verify proper logic card operation after a simulated loss of power.

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 three samples:

- auxiliary feedwater pump verification of high speed stop and overspeed setpoint settings after removal and re-installation of the governor;
- high pressure injection pump 1 Mode 5 baseline test in piggyback Mode [subsequent to reinstallation of the pump following modification]; and
- high pressure injection pump 2 Mode 5 baseline test in piggyback Mode [subsequent to reinstallation of the pump following modification].

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage (71111.20)

.1 Containment Closeout

a. Inspection Scope

The inspectors evaluated the licensee's efforts to remove loose debris from containment as required by Plant Procedure DB-OP-06900, Attachment 11, Revision 22, and Technical Specification 4.5.2.c. The inspectors evaluated each accessible area of containment subsequent to final closeout inspections performed by senior operations management personnel.

b. Findings

No findings of significance were identified.

.2 Plant Heatup to Operational Mode 3

a. Inspection Scope

The inspectors observed licensee performance during the transition to Modes 4 and 3 and subsequent plant response. The inspectors focused on control room observations of the operating crews, including turnover and/or scheduling meetings, plant lineups, and control rod drive insertion time testing. Observations were not limited to the control room and included tours of the auxiliary building and containment and attendance at scheduled planning and trouble shooting meetings. The inspectors verified that the requirements for operational Mode entries were as completed and documented in applicable licensee plant startup procedures.

b. Findings

No findings of significance were identified. This activity was discussed further in Section 4OA5.

.3 Inadvertent Technical Specification Action Statement Entry

a. Inspection Scope

On December 30, 2003, while observing control room activities associated with plant heatup from operational Mode 5 to 3, the inspectors observed licensee response to an error in positioning of a valve under a clearance which resulted in an inadvertent technical specification action statement entry.

b. Findings

Introduction: A Non-Cited Violation of Technical Specifications, having very low safety significance (Green) was self-revealed when, in preparation for electrical testing of the motor on CC 1328 [CCW to CRD Booster Pump 1 Suction Valve], the licensee hung a clearance that de-energized the motor with the valve in the open position. This rendered the valve incapable of closing automatically upon an SFAS Level 4 actuation signal, making CCW Train 1 inoperable. After approximately 6 hours, this condition was identified by a different operating crew.

Description: On December 30, 2003, during the licensee's heatup to Mode 3, the Operations Department implemented a clearance, NDB-SUB016-04-044, to support scheduled work under Work Order (WO) 200031669. The work was to support electrical testing of the motor on valve CC 1328. The WO contained the following directions: "in Modes 1-4: if CC 1328 is opened while de-energized then the CCW loop supplying the non-essential loads is inoperable." The clearance specified test tags be hung for controlling CC 1328 but did not specify a position. The operators that hung the tags left CC 1328 in the open position with its motor de-energized. The control room operators did not recognize that the valve was de-energized open and did not declare CCW Train 1, the train supplying non-essential loads, inoperable. The oncoming crew identified that CC 1328 was open, thus rendering CCW Train 1 inoperable. The oncoming crew restored power to the valve approximately 6 hours after the valve was de-energized.

Analysis: The finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued on April 29, 2002. The finding: (1) involved the human performance attribute of the Mitigating Systems Cornerstone; and (2) affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

In accordance with IMC 0609, "Significance Determination Process," Appendix A, Attachment 1, dated March 18, 2002, the inspectors performed an SDP Phase 1 screening and determined that the issue affected the Mitigation Systems Cornerstone in that CCW is used to remove core decay heat. This finding was of very low safety significance because at the time of the occurrence, the reactor was in Mode 4 with no substantial decay heat, the duration of the event was a small fraction of the applicable TS action statement time limit, and one train of CCW remained operable.

Enforcement: The inspectors concluded that this is a performance issue because maintaining knowledge of system configuration and thus system operability was reasonably within the licensee's ability to control and the event could have been prevented. The performance deficiency associated with this event is the control room staff did not adequately monitor and control system status which resulted in a unanticipated entry into a Technical Specification action statement. Technical Specification 6.8.1.a requires implementation of procedures recommended by Regulatory Guide 1.33. Regulatory Guide 1.33 lists Administrative Procedures which address authorities and responsibilities for safe operation and shutdown. The licensee developed DB-OP-00000, "Conduct of Operations," Revision 07, a safety-related

procedure, to, in part, provide guidance on how Operations personnel carry out their duties and responsibilities as delineated in Station Procedures, Policies, Directives, and Manuals. Step 6.2.1 of DB-OP-00000 states "Operations Personnel . . . shall be responsible for monitoring the equipment, instrumentation and controls within their area and taking timely and proper action to ensure safe, conservative operation of the unit. Step 6.28.1 b of DB-OP-00000 states, "the following information shall be available on the status boards: Inoperable Technical Specification Equipment . . ." Additionally, Step 6.28.4 states "DP-OP-0018, Inoperable Equipment Tracking Log, is used to document and track the status of systems, subsystems, trains, components or devices required to be OPERABLE to satisfy the requirements of the Davis-Besse TS." Contrary to those requirements, the valve was de-energized in the open position, instead of the closed position, for a period of approximately 6 hours, thus rendering Train 1 of CCW inoperable, without the knowledge of the operating control room crew and without the crew declaring Train 1 inoperable. Because of the very low safety significance and because the issue has been entered into the licensee's corrective action program (CR 03-11414), it is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000346/2003025-01).

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors completed one sample this inspection period. The inspectors reviewed Temporary Modification 03-031, "DH 1509 and the Relief Line from DH 1509 to the Reactor Coolant Drain Tank," to verify that the modification did not affect the safety functions of risk significant safety systems. This temporary modification was a freeze seal put in place to facilitate replacement of DH 1509 [Decay Heat Pump 2 Emergency Sump Line Relief]. The inspectors reviewed the temporary modification package and associated 10 CFR 50.59 screening and compared them to system, USAR, and TS requirements 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**

4OA1 Performance Indicator Verification (71151)

.1 Safety System Unavailability - Emergency AC Power Systems

a. Inspection Scope

The inspectors reviewed the Performance Indicator (PI) data submitted by the licensee for completeness and accuracy for the Safety System Unavailability - Emergency A/C Power System in the Mitigating System cornerstone. The time period evaluated included the 4<sup>th</sup> Quarter 2002 through 3<sup>rd</sup> Quarter 2003. The inspectors compared the

data reported by the licensee to the definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2. The inspectors reviewed the licensee's unit logs, maintenance rule documents, and system engineer data, and compared that information to what was reported by the licensee.

b. Findings

No findings of significance were identified. Although the inspectors did not have any concerns with the accuracy of the data, the inspectors acknowledged that this PI was not a useful indicator of licensee performance due to the impact of the extended shutdown on the PI data.

.2 Safety System Unavailability - Residual Heat Removal Systems

a. Inspection Scope

The inspectors reviewed the Performance Indicator data submitted by the licensee for completeness and accuracy for the Safety System Unavailability - Residual Heat Removal System in the Mitigating System cornerstone. The time period evaluated included the 4<sup>th</sup> Quarter 2002 through 3<sup>rd</sup> Quarter 2003. The inspectors compared the data reported by the licensee to the definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2. The inspectors reviewed the licensee's unit logs, maintenance rule documents and system engineer data, and compared that information to what was reported by the licensee.

b. Findings

No findings of significance were identified. Although the inspectors did not have any concerns with the accuracy of the data, the inspectors acknowledged that this PI was not a useful indicator of licensee performance due to the impact of the extended shutdown on the PI data.

4OA2 Identification and Resolution of Problems (71152)

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.



4OA3 Event Followup (71153)

.1 (Closed) Licensee Event Report (LER) 50-346/2003-04: Inadequate Calibration of RCS Temperature Instrumentation

This event report documented a condition where temperature elements TERC3A5 and TERC3A6 [reactor coolant loop 2 hot leg wide range temperature elements], had not had their calibration verified as required by Technical Specification 3.3.3.6.

The licensee developed procedure DB-SC-0411, "RTD Cross Calibration," to, in part, check to perform calibration and stability checks RCS RTDs required by TS. Temperature elements TERC3A5 and TERC3A6 were not included in this procedure. These RTDs provided input to the Reactor Protection System, Post Accident Monitoring System, and remote shutdown temperature indication.

Upon discovery of this issue, the licensee verified the calibration of TERC3A5. Calibration verification was not possible for TERC3A6 due to the RTD being damaged during removal. Based on operational data obtained from all four reactor coolant hot leg wide range temperature instruments, the licensee believes that TERC3A6 would have passed its calibration verification. Since TERC3A6 was not calibrated in accordance with Technical Specification surveillance requirements, the licensee determined that the plant had operated with the non-calibrated instrument which represented a condition prohibited by Technical Specification and reportable per 10 CFR 50.73(a)(2)(i)(B).

The licensee performed an extent of condition review and did not identify additional omission of RTD calibration requirements. On May 22, 2003, the licensee implemented procedure DB-SC-03159, "RTD Cross Calibration." This procedure replaced DB-SC-0411 and will be used to determine the calibration accuracy and stability of the RCS narrow and wide range RTDs. This new procedure included TERC3A5 and TERC3A6 as part of the cross calibration process for RCS RTDs.

The failure to perform the required surveillance testing for TERC3A6 was a minor violation of Technical Specification 3.3.3.6, since this constituted a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee entered this issue in their corrective action program (CR 03-09387). Based on the inspectors' review of the LER and the licensee's corrective actions described above, this LER is closed.

.2 (Closed) Licensee Event Report (LER) 50-346/2003-011: Inoperability of Containment Spray Pump 1 Due to Solid State Trip Device Ground Fault False Trip

This event report documented plant transition from Mode 5 to Mode 3 with an inoperable containment spray pump which is a condition prohibited by Technical Specification 3.0.4. The inspectors reviewed the LER and condition report that documented the event.

On September 13, 2003, the plant transitioned from Mode 5 to Mode 4 and to Mode 3 on September 15, 2003. On September 17, 2003, Containment Spray Pump (CSP) 1 failed to start on demand and was declared inoperable. The licensee determined that

the cause of the trip was a malfunction in the ground fault function in the solid state trip device associated with the supply breaker for CSP 1. After determining that the ground fault trip was not required, the licensee processed a design change and removed the fault sensing circuit from containment spray pump 1 (Inspection Report No. 05000346/2003018). The licensee also identified that CSP 2 is susceptible to potential false ground fault tripping and that four breakers that feed MCCs may have loadings similar to that seen by the CSP 1 breaker. The CSPs are the largest single 480 starting load with the plant. The licensee accomplished a design change and removed the ground fault function of the CSP 2 supply breaker. The licensee reviewed the need for immediate action on the MCC breakers and concluded that there was no history indicating an issue with ground fault false trips, that inrush current profiles seen by these MCC breakers were different from that seen by the CSP breakers, and that the MCC breakers were not susceptible to the type of trips experienced by the CSP breakers. The licensee did not identify why the condition occurred at this time although one offsite expert suggested that trip device electronic drift might be responsible.

Entering into Mode 4 and then Mode 3 with an inoperable Containment Spray Pump is a licensee-identified violation of Technical Specification 3.0.4. This finding is more than minor because it involved a Mode change without all required equipment being operable. The finding affects the Barrier Integrity Cornerstone and was considered to have a very low safety significance (Green) using Appendix H of the Significance Determination Process because the likelihood of an accident leading to core damage was not affected, the probability of early containment failure and therefore a large early release was negligible, and the redundant train remained operable. This issue is discussed further in Section 4OA7. Based on the inspectors' review of the LER and CR and the licensee's corrective actions, this LER is closed.

.3 (Closed) Licensee Event Report (LER) 50-346/2003-012: Auxiliary Feedwater Pump/Turbine Inoperable due to Degraded Steam Traps

This event report documented plant transition from Mode 4 to Mode 3 with an inoperable train of Auxiliary Feedwater (AFW) which is a condition prohibited by Technical Specification 3.0.4. The inspectors reviewed the LER, the CR and corrective actions written for this event, and the root cause report developed and prepared by the licensee.

On September 15, 2003, the plant transitioned from Mode 4 to Mode 3. On September 23, 2003, with the plant in Mode 3, Auxiliary Feedwater Pump 1 was being tested to verify that the pump would come to rated speed in the time required by the plant's existing analyses. The pump was originally declared operable; but because of the non-inclusion of time required for instrument response in the SFRCS, the pump operability decision was reversed with subsequent testing revealing issues with the governor valve linkage and operability of associated steam traps. The subsequent testing also indicated variability in response time with test timing from the previous test.

The licensee initially determined that the governor valve linkage misadjustments were the cause of slow turbine response. The need to revise the initial operability call was because of unclear wording in the test procedure. The governor valve linkage was removed and reassembled using an approved procedure, DB-MM-09098; AFPT Governor Maintenance; Revision 04 as reported in Inspection Report

05000346/2003018. Additionally, the test procedures which addressed AFP response time testing, DP-SP-03157 and DP-OP-3166, were revised to specifically include instrument response time in comparing results to acceptance criteria (CR 03-07975).

In the LER, the licensee stated that the final conclusion was that the Auxiliary Feedwater Pump did not meet acceptance criteria due to moisture in the steam line caused by the degraded performance of two steam traps in the AFP steam supply piping. The licensee repaired the degraded traps. The licensee has also initiated corrective action to initiate Planned Maintenance to address the periodic inspection and repair of Auxiliary Feedwater Pump steam traps.

Entering into Mode 3 with an inoperable AFP is a licensee-identified violation of Technical Specification 3.0.4. This finding is more than minor because it involved a mode change without all required equipment being operable. The finding affects the Mitigation Systems Cornerstone and was considered to have a very low safety significance (Green) using Appendix A, Attachment 1 of the Significance Determination Process because the redundant train was operable and AFP1 would have provided feedwater flow to the steam generators if required by the plant conditions. This issue was discussed further in Section 4OA7 of this report. Based on the inspectors' review of the LER and the licensee's corrective actions, this LER is closed.

#### 4OA5 Other Activities

One of the key building blocks in the licensee's Return to Service Plan was the Management and Human Performance Excellence Plan. The purpose of this plan was to address the fact that "management ineffectively implemented processes, and thus failed to detect and address plant problems as opportunities arose." The primary management contributors to this failure were grouped into the following areas:

- Nuclear Safety Culture;
- Management/Personnel Development;
- Standards and Decision-Making;
- Oversight and Assessments; and
- Program/Corrective Action/Procedure Compliance.

The inspectors observed the day-to-day implementation of activities that the licensee made toward completing their Return to Service Plan. Almost every inspection activity performed by the resident inspectors touched upon one of those five areas. Observations made by the resident inspectors were routinely discussed with the Davis-Besse Oversight Panel members and were used, in part, to gauge licensee's efforts to improve their performance in these areas on a day-to-day basis.

To better facilitate the inspection and documentation of issues not specifically covered by existing inspection procedures, but important to the evaluation of the licensee's readiness for restart, the Special Inspection for Residents inspection plan was developed and implemented. Inspection Procedure 93812, "Special Inspection," was used as a guideline to document these issues and remains in effect for future resident inspection reports until a time to be determined by the Davis-Besse Oversight Panel.

The inspectors performed inspections, as required, to adequately assess licensee performance and readiness for restart in the following areas:

- performance of plant activities, including maintenance activities;
- follow-up of specific Oversight Panel Technical issues;
- licensee performance during restart readiness meetings;
- licensee performance in categorizing, classifying, and correcting deficient plant conditions during the restart process;
- licensee performance at meetings associated with work backlogs, including the deferral of WOs, operator workarounds, temporary modifications, and permanent modifications; and
- activities associated with safety conscious work environment and safety culture.

.1 Observation of Licensee Performance During Plant Heatup

a. Scope:

The inspectors continuously observed licensee performance during the transition to Modes 4 and 3 and subsequent heatup through the end of the inspection period. The inspectors focused on control room observations of operating crews including turnover, scheduling meetings, pre-job briefs, operator performance, and plant lineups. Observations, while primarily in the control room, included tours of the auxiliary building and containment and attendance at scheduled planning and trouble shooting meetings.

b. Observations:

The observations commenced on December 26, 2003, with the licensee verifying completion of all Mode 4 restraints and making preparations to heatup by starting two RCPs. The observations continued until early on December 31, 2003, when licensee management ordered a stand down of activities to investigate causes and implement corrective actions to address various problems, which included an inadvertent entry into a technical specification action statement (Section 1R20). All heatup activities were stopped and RCS pressure and temperature were maintained at the conditions that existed at the start of the stand down.

In addition to concerns and findings discussed elsewhere in this report, the inspectors had the following observations:

- Alarm response procedure usage was inconsistent;
- An equipment issue, first identified on September 17, 2003, was not repaired prior to the heatup and became a limiting restraint until it could be repaired;
- Tools used to track the status of degraded equipment were not always utilized;
- During this inspection several control board recorders were observed retracted from their latched/in positions. Two weeks earlier, during the Restart Readiness Assessment Team Inspection, the NRC had questioned if there were seismic concerns when recorders were retracted. When the Shift Manager was asked if the seismic question was resolved, the Shift Manager stated that he had not heard of the issue but directed the recorders to be returned to their "in" position;

- Pre-job briefing level of detail, the use of reverse briefing techniques, and use of questions to verify understanding of the brief was not consistent among the shift crews; and
- The initial schedule for heatup was not effectively implemented. Contributing causes were emergent equipment issues and late identification of some requirements that were not in the schedule.

c. Conclusions:

There were no additional findings of significance. Although these examples did not represent safety issues, they illustrated continued performance weaknesses in these areas. It is important to note that in most cases, the licensee programs and processes that were in place, if properly implemented, were sufficient to ensure success.

.2 Classification, Categorization, and Resolution of Restart Related Issues

The resident inspectors continued to monitor the licensee's activity related to properly classifying, categorizing and resolving their backlog of WOs, corrective actions, and modifications required to be completed prior to transitioning to Mode 4. To accomplish this, the inspectors:

- attended and assessed licensee management meetings;
- monitored the management of open Mode 4 and 3 restraints;
- evaluated the licensee classification of emergent deficient conditions; and
- evaluated closed mode restraints.

As part of this inspection, the inspectors attended selected Mode Change Readiness Review meetings, Senior Management Team meetings, Management Review Board meetings, Plant Support Center meetings, Restart Station Review Board meetings, and various work planning meetings where classification of condition reports, prioritization of work activities, and setting of work completion dates took place.

On November 20, 2003, the inspectors attended the Corporate Nuclear Review Board meeting. The primary focus of the meeting was to discuss Davis-Besse's readiness for restart. The board subcommittee leaders reported on their results of their evaluation in the following areas:

- Operations/Training;
- Configuration Control/Equipment Reliability;
- Work Management;
- Loss Prevention (Programmatic and Organizational);
- 50.59 Evaluation Review; and
- License Amendment Requests.

The inspectors concluded that the Board's presentations and questions were sufficiently critical to assess the licensee's plant safety focus in each of these areas.

No significant issues were identified.

### .3 Closure of Restart Checklist Items

The Davis-Besse Oversight Panel (0350 Panel) met to review the following Restart Checklist Item and approved its closure:

#### a. Checklist Item 5.d (Test Program Development and Implementation):

The scope of the inspection activities used to evaluate this item included verification that the licensee adequately:

- performed post-maintenance and post-modification testing of equipment important for the safe operation of the plant;
- demonstrated the leak tightness of the containment building;
- performed testing activities which demonstrated that the RCS and associated piping had no pressure boundary leakage;
- performed specific inspections of both the control rod drive nozzle penetrations on the upper reactor head and the incore nozzle penetrations on the bottom reactor head, that verified no leakage was present; and
- developed an integrated restart testing plan.

#### Evaluate the Adequacy of Post Maintenance and Modification Testing

The resident staff performed inspections of 17 post maintenance tests, 23 surveillance tests, and 3 temporary modifications. Included in these samples were inspection activities which assessed post modification testing. Specifically:

- Integrated Safety Features Actuation Testing (post relay replacement);
- HPI Pump Testing (post modification testing);
- Emergency Diesel Generator Testing (post air start system modifications);
- Decay Heat Pit (integrity test); and
- RCP Testing (post refurbishment for loop 1 pumps; leak testing posting seal RTD removal).

These inspections were documented in resident inspection reports 50-346/2003-02, 50-346/2003-04, 50-346/2003-013, 50-346/2003-015, 05000346/2003017, 05000346/2003018, and 05000346/2003022.

#### Perform ILRT of Containment Vessel

This inspection activity was documented in inspection report 50-346/03-05(DRS).

A Special Inspection was performed to evaluate the conduct of the containment integrated leak rate test at the Davis-Besse site. During this inspection, the inspectors reviewed a calculation for containment volume, reviewed the test procedure, monitored prerequisite activities such as valve lineups, containment walkdowns, and local leak rate tests, witnessed the performance of the test, monitored system restoration activities, and reviewed the results of the test after they were approved by licensee management.

The inspectors concluded that containment integrity had been restored after the containment had been opened for replacement of the reactor head. Based on the results of this inspection, no findings of significance were identified.

#### Perform RCS Leakage (low and high pressure) Tests

These inspection activities were documented in inspection reports 50-346/03-13 and 50-346/03-23.

The resident staff evaluated the licensee performance of the initial pressure tests conducted on the RCS and associated piping. The licensee developed procedure DB-PF-03010, "RCS Leakage Test," to provide guidance for performing the reactor coolant leak checks. This procedure was used as guidance for the 50 psig check, and formally implemented at 250 psig. As part of this evaluation, the inspectors ensured that equipment deficiencies identified during the walkdowns associated with the tests were documented, repaired, or had appropriate corrective actions assigned.

The RCS Leakage Test was performed at normal operating pressure. A special inspection of licensee activities associated with leak testing of the RCS, inspection of the lower head penetrations, and replacement head was performed. This inspection was conducted by Region III based and resident inspectors.

#### Perform a Visual Inspection of the Reactor Pressure Vessel Bottom In-core Nozzles After Heatup

This inspection activity was documented in inspection report 05000346/2003023.

In preparation for the bottom head examination following the 7 day hold at NOP, the inspector reviewed digital photographs and video of the baseline examination conducted May 8, 2003. Procedure EN-DP-01500 "Reactor Vessel Inspection Procedure", Revision 4, and certifications for the inspection personnel were also reviewed prior to the bottom head inspection. General condition of the bottom head was directly observed through an opening in the insulation after the NOP test. The inspector observed approximately 75% of the inspection real time. Comparisons of this inspection to the baseline were performed for several nozzles.

Digital photographs and video of the baseline inspection conducted May 8, 2003, showed that some white or rust colored residue remained in the area surrounding the penetrations even though the bottom head was pressure washed. The residue appeared thin and tightly adhered. Some residue was noted in the annular space between the nozzle and vessel bore and evidence of tape remained on the head in spots. Camera resolution was judged to be excellent. Procedure EN-DP-01500 "Reactor Vessel Inspection Procedure", Revision 4 was reviewed and found to contain adequate guidance for performing the inspection.

The inspectors observed approximately 75% of the post NOP examination which was conducted on October 6-7, 2003. A VT-2 qualified contract inspector and a boric acid control qualified inspector from the Davis-Besse staff performed the inspection. Proper location was verified by both inspectors and the remote camera operator. Visual acuity

and lighting was verified at the beginning and end of each shift. Specifically, the procedure required the camera system to be able to resolve Code VT-2 sized alpha numeric characters; however, the VT-1 sized letters were also readily visible. The inspection was recorded on video tape. Overall, the resolution was judged to be excellent.

The inspection did not identify any pressure boundary leakage or lower head corrosion beyond a light coat of surface rust as described in Bulletin 2003-02.

### Restart Test Plan

The inspectors reviewed the Davis-Besse Integrated Restart Test Plan, Revision 01 (dated December 5, 2003). This plan documented the operational improvement initiatives and plan for the transition from operational Mode 5 to 100 percent power. Specific areas addressed were:

- An enhanced implementation of the Integrated Restart Test Plan for Restart which incorporated corrective actions that developed from the Operational Readiness Assessment Report, Collective Significance Review (CR 03-08418) and NQA assessment of the NOP test;
- The organizational structure of the license had transitioned to a normal operational organization. Specific assignments regarding the implementation of the Restart Test Plan, which included an Integrated Restart Test Plan Project Manager, Integrated Restart Test Plan Shift Coordinators, and Restart Assessment Team Inspection Liaisons had been assigned;
- The licensee developed and implemented an Operations Improvement Action Plan to address performance deficiencies discovered during the NOP test;
- On-shift operations oversight managers had been assigned to provide real-time assessment and feedback of operator performance. These individuals would remain in place for 4 weeks after attaining 100% power; and
- Operational Readiness Assessment Plan for Restart assessments (IAW DBBP-VP-0002) will be performed prior to entering operational Mode 4 and Mode 2. Additionally, effectiveness reviews are planned prior to initial criticality, initial synchronization of the generator to the electric grid, and subsequent to placing the second main feed water pump in service.

### Conclusion

The inspection activities, as described above, documented sufficient inspections to close Restart Item 5.d, "Test Program Development and Implementation." This item was discussed with the Davis-Besse 0350 Panel, on December 9, 2003, and the panel concurred that the item should be closed.

### 40A6 Meetings

- .1 The inspectors presented the inspection results to Mr. Lew Myers, and other members of licensee management on January 13, 2004. The licensee acknowledged the findings presented. No proprietary information was identified.



.2 Interim Exit Meeting

An interim exit was conducted for:

- Licensed Operator Requalification 71111.11B with Mr. D. Bondy on December 29, 2003, via telephone.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as NCVs.

- Technical Specification 3.0.4 prohibits entry into an operational mode, except for complying with action statements, with inoperable technical specification equipment required in that mode, unless specifically allowed by the technical specifications. Contrary to this, on September 15, 2003, the plant transitioned from Mode 4 to Mode 3 with Auxiliary Feedwater Pump (AFP) 1 inoperable as was identified by scheduled testing on September 23, 2003, and the subsequent cause investigation. This was identified in licensee's LER 2003-012 and CR 03-07975. The finding is of very low safety significance because the redundant train was available and AFP1 would have provided water to the steam generator if required by plant conditions.
- Technical Specification 3.0.4 prohibits entry into an operational mode, except for complying with action statements, with inoperable technical specification equipment required in that mode, unless specifically allowed by the Technical Specifications. Contrary to this, on September 13, 2003, the plant transitioned from Mode 5 to Mode 4 and on September 15, 2003, to Mode 3 with Containment Spray Pump (CSP) 1 inoperable as was identified by scheduled testing on September 17, 2003, and the subsequent cause investigation. This was identified in licensee's LER 2003-011 and CR 03-07794. The finding is of very low safety significance because the redundant train was available, the likelihood of an accident leading to core damage was not affected, the probability of early containment failure was negligible.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee Personnel

B. Allen, Plant Manager  
M. Bezilla, Site Vice President  
D. Bondy, Operations Requalification Training Supervisor  
G. Dunn, Manager, Regulatory Affairs  
J. Grabnar, Manager, Design Engineering  
J. Hagan, Senior Vice President, FENOC  
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

05000346/2003025-01	NCV	Control Room Staff Did Not Adequately Monitor and Control System Status Which Resulted in an Unanticipated Entry into a Technical Specification Action Statement
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#### Closed

50-346/2003-04	LER	Inadequate Calibration of Reactor Coolant System Temperature Instrumentation
50-346/2003-011	LER	Inoperability of Containment Spray Pump 1 Due to Solid State Trip Device Ground Fault False Trip
50-346/2003-012	LER	Auxiliary Feedwater Pump Turbine Inoperable due to Degraded Steam Traps

## LIST OF DOCUMENTS REVIEWED

### 1R01 Adverse Weather Protection

DB-OP-06913; Seasonal Plant Preparation Checklist; Revision 07

### 1R04 Equipment Alignment

DB-OP-06011; High Pressure Injection System; Revision 08

Operational Schematic OS-003; High Pressure Injection System; Rev. 21

Operability Evaluation 2003-032; Revision 2

CR 03-06845; Maintenance Rule (A)(1)Eval for Service Water Exceeding Perf. Criteria

Calculation C-NSA-011.01-014; Evaluation of Service Water Flow Balance and Service Water Pump Baseline Testing Results

Calculation C-NSA-011.01-013; Service Water Flow Balance Test Acceptance Criteria

CR 03-10731; Request for NED to Evaluate Acceptability of SW Flow Balance Test, DB-SP-03000

CR 03-09474; Evaluate Service Water Pump 1 Baseline Data for Impact on the Design Basis

CR 03-10371; SW1358 CAC Outlet Valve has a Low Margin

CR 03-10623; Evaluate Service Water Pump 2 Baseline Data Taken During DB-PF-03224

Drawing OS-020; Service Water System

DB-SP-3001; Service Water Loop 2 Integrated Flow Balance Procedure; Revision 03 (August 19, 2003)

DB-OP-06261; Service Water System Operating Procedure; Revision 12

DB-OP-06012; Decay Heat and Low Pressure Injection System Operating Procedure; Revision 12

Operational Schematic OS-004; Decay Heat and Low Pressure Injection System; Revision 35

### 1R05 Fire Protection

Fire Hazards Analysis Report

DB-FP-04030; Post Maintenance Visual Inspection of Penetration Seals and Barriers; Revision 01

DB-FP-00003; Pre-Fire Plan Guidelines; Revision 04

PFP-TB-252; Protected Area Pre-Fire Plan; Feed Water Pump Room; Revision 04

1R11 Licensed Operator Requalification Program

DBBP-OPS-0001; Operations Expectation and Standards; Revision 04

DB-OP-0000; Conduct of Operations; Revision 06

Simulator Guides for Examinations

P-OPS-4 Attachment 5; Simulator Crew Evaluation Form; Revision 09

1R13 Maintenance Risk and Emergent Work

Contingency Plan 13RFO-42; Decay Heat Pump 1, Makeup Pump 1, and Both HPI Pumps Unavailable; Revision 00

Contingency Plan 13RFO-43; Orange Risk With Both Makeup Pumps and High Pressure Injection Pump Unavailable, Concurrent With Reduced Inventory; Revision 00

Contingency Plan 13RFO-43; Orange Risk With Makeup Pump 1 Unavailable Concurrent With Reduced Inventory; Revision 02

CR 03-11199; FW 1009 Valve Gasketed Joint Leaking

DB-OP-06225; MDFP Operating Procedure; Revision 06

DB-OP-06226; Startup Procedure Operating Procedure; Revision 04

DB-OP-6900; Plant Heatup; Revision 22

1R14 Personnel Performance During Nonroutine Plant Evolutions

Contingency Plan 13RFO-43; Orange Risk with Makeup Pump 1 Unavailable, Concurrent with Reduced Inventory; Revision 02

DB-OP-06002; RCS Draining and Nitrogen Blanketing; Revision 09

DB-OP-06904; Shutdown Operations; Revision 15

1R15 Operability Evaluations

Operability Evaluation 2003-019; EDG FO Transfer Pump 1-2 and feed cable low insulation values; Revision 02

Operability Evaluation 2003-0038; Use of Mobil Heavy Medium Oil vice Mobil 12-M (light weight oil) in DH Pump 1 Inboard Bearing

WO 200068802; DH Pump #1 Inboard Housing Oil Leakage

WO 200062054; P42-1 - Flush, Change Oil

1R16 Operator Workarounds

CR 03-04171; DH 2733 Leaks By

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

1R17 Permanent Modifications

ECP No 03-0569-00; Correct SFRCS Logic to Prevent Block on Restoration of Power

DB-MI-09058; Consolidate Controls Logic Module P/N 6N566 Functional Test; Revision 03

1R19 Post-Maintenance Testing

DB-SP-04152; AFPT 1 HSS and Overspeed Trip; Revision 07

DB-OP-06011; High Pressure Injection System; Revision 08

DB-PF-03407; HPI Pump 1 Mode 5 Baseline Test in Piggyback Mode; Revision 05

DB-PF-03408; HPI Pump 2 Mode 5 Baseline Test in Piggyback Mode; Revision 02

1R20 Refueling and Outage

DP-OP-6900; Plant Heatup; Revision 22

DP-OP-6911; Pre-Startup Checklist; Revision 07

CR 03-11328; Containment Closeout Tour 12/27/2003 @ 1344

CR 03-11330; Containment Entry for Reinspections Required After Closure and Testing

CR 03-11414; Missed Technical Specification Entry

DB-2002-01 NDB-SUB016-04-044; Tagout for CC 1328

WO 200031699; PM 0225 MV1328 & All Assoc Assets

1R23 Temporary Modification

TM 03-0031; DH1509 and the Relief Line from DH 1509 to the Reactor Coolant Drain Tank Header

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

4OA1 Performance Indicator Verification

CR 03-09400; NRC Performance Indicator Data Inaccurately Identified and Reported

CR 03- 09407; Inaccurate Performance Indicator Data Reported to the NRC

CR 03-09298; Emergency AC Power NRC Performance Indicator Error, Sept 03

NEI 99-02; Revision 2

4OA3 Event Followup

DB-SC-03159; RTD Cross Calibration; Revision 01

CR 02-09387; The Calibration of TERC3A5 and TERC3A6 is not Checked

CR 03-07975; Auxiliary Feedwater Train 1 Inoperability Due to Response Time

CR 03-07794; CTMT Spray Pump 1 Breaker BE111, Tripped Free Upon Start

4OA5 Other Activities

DB-OP-6900, Plant Heatup; Revision 22

DB-OP-06911, Pre-Startup Checklist; Revision 07

WO Notification 600103495; Replace Bonnet Gasket on FW 1009

## LIST OF ACRONYMS USED

ADAMS	Agency-wide Document Access and Management System
AFP	Auxiliary Feedwater Pump
AFW	Auxiliary Feedwater
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
CRDM	Control Rod Drive Mechanism
CSP	Containment Spray Pumps
FENOC	FirstEnergy Nuclear Operating Company
HPI	High Pressure Injection
ILRT	Integrated Leakage Rate Test
IMC	Inspection Manual Chapter
IR	Inspection Report
LAR	License Amendment Request
LER	Licensee Event Report
MCC	Motor Control Center
NCV	Non-Cited Violation
NOP	Normal Operating Pressure
NRC	United States Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicator
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RTD	Resistance Temperature Detector
SFRCS	Steam Feedwater Rupture Control System
SDP	Significance Determination Process
SW	Service Water
TS	Technical Specifications
USAR	Updated Safety Analysis Report
WO	Work Order