

October 18, 2006

EA-03-0214

Mr. Mark B. Bezilla
Site Vice President
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 05000346/2006004
AND EP INSPECTION REPORT 05000346/2006012

Dear Mr. Bezilla:

On September 30, 2006, 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 September 27, 2006, with Mr. B. Allen and other members of your staff. Additionally, this inspection report documents special inspection activities associated with your compliance with the March 8, 2004, Confirmatory Order (EA 03-214).

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.

The report documents one NRC-identified finding of very low safety significance (Green). However, because of its very low safety significant and because the issue has been entered into your corrective action program, the NRC is treating the violation as a non-cited violation (NCV) in accordance with Section VI.A.1 of the NRC Enforcement Policy. Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in this report.

If you contest the subject or severity of any NCV 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, D.C. 20555-0001; with copies to the Regional Administrator Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-001; and the NRC Resident Inspector at Davis-Besse.

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

Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000346/2006004 and 05000346/2006012
w/Attachment: Supplemental Information

cc w/encl: The Honorable Dennis Kucinich
G. Leidich, President and Chief
Nuclear Officer - FENOC
J. Hagan, Senior Vice President of
Operations and Chief Operating Officer
Richard Anderson, Vice President
Director, Plant Operations
Manager - Site Regulatory Compliance
D. Pace, Senior Vice President of
of Fleet Engineering
J. Rinckel, Vice President, Fleet Oversight
D. Jenkins, Attorney, FirstEnergy
Manager - Fleet Licensing
Ohio State Liaison Officer
R. Owen, Administrator, Ohio Department of Health
Public Utilities Commission of Ohio
President, Lucas County Board of Commissioners
President, Ottawa County Board of Commissioners

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

Sincerely,

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

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

Enclosure: Inspection Report 05000346/2006004 and 05000346/2006012
w/Attachment: Supplemental Information

cc w/encl: The Honorable Dennis Kucinich
G. Leidich, President and Chief
Nuclear Officer - FENOC
J. Hagan, Senior Vice President of
Operations and Chief Operating Officer
Richard Anderson, Vice President
Director, Plant Operations
Manager - Site Regulatory Compliance
D. Pace, Senior Vice President of
of Fleet Engineering
J. Rinckel, Vice President, Fleet Oversight
D. Jenkins, Attorney, FirstEnergy
Manager - Fleet Licensing
Ohio State Liaison Officer
R. Owen, Administrator, Ohio Department of Health
Public Utilities Commission of Ohio
President, Lucas County Board of Commissioners
President, Ottawa County Board of Commissioners

DOCUMENT NAME: E:\Filenet\ML062920233.wpd

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RIII	RIII				
NAME	GWright	EDuncan				
DATE	10/18/06	10/18/06				

OFFICIAL RECORD COPY

DISTRIBUTION:

DXC1

TEB

SPS1

SJC4

RidsNrrDirslrib

GEG

KGO

JER7

CAA1

LSL (electronic IR's only)

C. Pederson, DRS (hard copy - IR's only)

DRPIII

DRSIII

PLB1

TXN

ROPreports@nrc.gov (inspection reports, final SDP letters, any letter with an IR number)

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000346/2006004 and 05000346/2006012

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Davis-Besse Nuclear Power Station

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

Dates: July 1, 2006 through September 30, 2006

Inspectors: J. Rutkowski, Senior Resident Inspector
R. Smith, Resident Inspector
M. Holmberg, Reactor Inspector
G. Wright, Project Engineer
J. Jacobson, Senior Reactor Inspector
R. Ruiz, Reactor Engineer

Approved by: E. Duncan, Chief
Branch 6
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000346/2006004 and 05000346/2006012; 7/1/2006 - 9/30/2006; Davis-Besse Nuclear Power Station; Adverse Weather Protection.

This report covers a 3-month period of baseline inspection. The inspection was conducted by Region III inspectors and resident inspectors. One Green finding 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. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. A finding of very low safety significance was identified by the inspectors for the failure to control loose materials located adjacent to the switchyard and under power lines from the switchyard to the station's large power transformers. This material could be carried into the switchyard or the power lines by high winds. Once identified, the licensee took action to relocate the material.

The issue was more than minor because, if left uncorrected, the prolonged presence of loose items located immediately adjacent to the switchyard increased the risk of an adverse impact to the proper operation of the switchyard and power lines and therefore could become a more significant safety concern. The issue was of very low safety significance because the finding did not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator; the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available; and the finding did not increase the likelihood of a fire or internal or external flooding. The issue was not considered a violation of regulatory requirements because it did not affect safety-related structures, systems, or components. This finding was similar to a previous finding and the cause was related to the cross-cutting area of problem identification and resolution in that corrective actions were not effectively implemented. (Section 1R01)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

At the beginning of the inspection period, the plant was operating at 100 percent power.

On September 6, 2006, the licensee manually tripped the reactor in response to decreasing condenser vacuum. Following repair activities, the plant re-entered Mode 2 on September 7, 2006, and achieved Mode 1 and 100 percent power on September 8, 2006.

On September 14, 2006, the licensee lowered power to about 90 percent power to isolate steam and feedwater to high pressure feedwater heaters train 1 in response to a steam leak on a moisture separator re-heater drain tank first stage drain line to high pressure feedwater heater 1-5. On September 21, 2006, the licensee returned power to 100 percent power after repairs were completed. The plant operated at 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors reviewed applicable licensee procedures and performed a walkdown of areas immediately adjacent to the Davis-Besse switchyard, areas under the lines from the switchyard to the station main transformers, and exterior portions of the protected area. The inspectors evaluated the licensee's preparations for adverse weather with emphasis on conditions that could result from tornados and high winds. The inspectors focused on plant specific design features for the systems and implementation of the procedures for responding to or mitigating the effects of high wind conditions. The inspectors also determined whether operator actions specified by plant specific procedures were appropriate.

This review represented one inspection sample associated with the licensee's preparation for high winds during warm summer weather.

b. Findings

Introduction: The inspectors identified a Green finding for the licensee's failure to control materials in the areas adjacent to the Davis-Besse switchyard and in the areas under the power lines from the switchyard to the station's large power transformers. Those materials could be susceptible to be displaced by high winds. Specifically, the inspectors identified wooden pallets and plywood near the switchyard and under the power lines, loose tarps under the power lines, loose cooling tower fill material north of the switchyard, and a large amount of loose material in the vicinity of service building 2.

A similar issue was identified by the inspectors in 2005. No violation of regulatory requirements occurred.

Description: On July 13, 2006, the inspectors conducted a walkdown of the areas immediately adjacent to the switchyard and the exterior portions of the protected area, in the vicinity of the large station transformers, to assess the licensee's preparations to preclude or minimize potential damage from high velocity winds associated with severe thunderstorms or tornados. During the walkdown, the inspectors identified multiple wooden pallets and plywood stacked near the switchyard and under lines from the switchyard, loose tarps under the power lines, loose cooling tower fill material stored north of the switchyard, and a large amount of loose material in the vicinity of service building 2, under the power lines from the switchyard to the station's main transformers. The inspectors concluded that high velocity winds, combined with the close proximity of these materials to the switchyard and the power lines from the switchyard to the transformers, increased the potential for a loss of offsite power.

A similar concern was identified by the inspectors in 2005 and was documented in IR 05000346/2005009. In response to that concern, the licensee modified NG-DB-00215, "Material Readiness and Housekeeping Inspection Program," in May 2006, to add requirements to check that outdoor materials were "restrained to prevent being blown into the switchyard or high voltage lines." The procedure added that such material shall be removed if it can not be restrained. The procedure also required that an inspection of the areas covered by the procedure be conducted at least monthly and results documented on an Observation Card.

The inspectors found documentation for an inspection of the area around the switchyard on July 14, 2006. That inspection was initiated following comments from the inspectors. No other cards were found for this area. The responsible manager stated that monthly checks were done, but were not documented. The inspectors' also identified information that indicated the area under the power lines inside the protected area had been inspected per procedure NG-DB-00215 in May and June 2006, after the procedure inspection guidelines were modified to address high wind concerns. The documentation of those inspections did not indicate any concerns. From the inspectors' discussion with the person that performed the inspection, it appeared that the individual had not been informed of the changes in NG-DB-00215 prior to conducting the May and June 2006 inspections.

Additionally, the inspectors determined that the equipment operators conducted and documented a weekly inspection of conditions inside the switchyard. No material storage conditions were documented in the log reviewed by the inspectors, which was consistent with the inspectors' observations of the area within the switchyard fence. The inspectors noted that the licensee's corrective action for the previous finding was that the operator tours and reviews for material storage would include the "switchyard and outside areas near the switchyard." This observation was conveyed to Operations department management.

Licensee Procedure NG-DB-00215 established responsibilities and criteria for the performance of plant material and housekeeping readiness inspections. The licensee's Quality Assurance Program Manual committed the licensee to American National Standards Institute (ANSI) N45.2.3-1973, "Housekeeping During the Construction Phase of Nuclear Power Plants," during the plant operational phase. This standard required scheduled inspections of work areas and construction practices to ensure protection of installed equipment from weather-related movement of stored items.

Analysis: The inspectors reviewed this finding using the guidance contained in Appendix B, "Issue Disposition Screening," of Inspection Manual Chapter 0612, "Power Reactor Inspection Reports." The inspectors determined that the licensee's failure to control material near risk significant equipment or to appropriately apply the standards contained in ANSI N45.2.3-1973 was a performance deficiency that affected the Initiating Events cornerstone and warranted a significance determination. The inspectors determined that the finding was more than minor because, if left uncorrected, the prolonged presence of loose items located immediately adjacent to the switchyard increased the risk of an adverse impact to the proper operation of the switchyard and power lines and therefore would become a more significant safety concern. The inspectors determined that the finding warranted evaluation using the SDP because the finding was associated with an increase in the likelihood of an initiating event.

The inspectors evaluated the finding using IMC 0609, Appendix A, Attachment 1, "Significance Determination of Reactor Inspection Findings for At-Power Situations." Using the Phase 1 SDP worksheet for the initiating event cornerstone, transient initiator contributor, the inspectors determined that the finding did not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator; the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available; and the finding did not increase the likelihood of a fire or internal or external flooding. Therefore, the finding was determined to be of very low safety significance (Green). The inspectors also determined that the cause of the finding was related to the cross-cutting area of problem identification and resolution. The licensee failed to ensure that corrective actions had been effectively implemented. At the time of the inspectors' sample, some of the groups responsible for verifying proper storage of material around the switchyard and related equipment, were unaware of, and consequently not adhering to the guidance in NG-DB-00215.

Enforcement: The inspectors concluded that the procedures, modified to address wind-propelled missiles and debris, were being inadequately implemented relative to applying housekeeping standards to risk significant equipment. Because no 10 CFR 50, Appendix B components were impacted by the finding (FIN 05000346/2006004-01), no violation of regulatory requirements occurred. The licensee entered the issue into their corrective action program as CR 06-002802.

1R04 Equipment Alignment (71111.04Q)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed a partial walkdown of the following systems to verify the operability of redundant or diverse trains and components when safety equipment was inoperable. The inspectors attempted to identify any discrepancies that could impact the function of the system, and therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, walked down control systems components, and verified that selected breakers, valves, and support equipment were in the correct position to support system operation. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program. Documents reviewed are listed in the Attachment.

- control room emergency ventilation train 2 during a train 1 outage;
- containment spray train 2 after system alignment for and restoration from quarterly pump testing;
- auxiliary feedwater train 2 during a train 1 outage; and
- high pressure injection (HPI) train 1 during a train 2 outage.

This review represented four quarterly inspection samples of partial system walkdowns.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors conducted complete walkdowns of the component cooling water (CCW) and decay heat (DH) systems to verify the functional capability of the systems. The inspectors used the licensee procedures and other documents listed in the Attachment to verify proper system alignment.

The inspectors also verified CCW and DH electrical power requirements, operator workarounds, component labeling, hanger and support installation, and associated support systems status. Pumps, if operating, were examined to ensure that any noticeable vibration was not excessive, pump leakoff was not excessive, bearings were not hot to the touch, and the pumps were properly ventilated. The walkdowns also included evaluation of system piping and supports against the following considerations:

- Piping and pipe supports did not show evidence of water hammer;
- Oil reservoir levels appeared normal;

- Snubbers did not appear to be leaking hydraulic fluid;
- Hangers were functional; and
- Component foundations were not degraded.

The inspectors also reviewed outstanding maintenance work orders to verify that any deficiencies identified did not significantly affect system function.. In addition, the inspectors reviewed the condition report (CR) database to verify that any CCW or DH equipment alignment problems were being identified and appropriately resolved. Documents reviewed during this inspection are listed in the Attachment.

This review represented two inspection samples of complete system walkdowns.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

a. Inspection Scope

The inspectors toured the areas listed below to assess the material condition and operational status of fire protection features. The inspectors determined whether combustibles and ignition sources were controlled in accordance with the licensee's procedures; fire detection and suppression equipment was available for use; passive fire barriers were maintained in good material condition; and compensatory measures for out-of-service, degraded, or inoperable fire-protection equipment were implemented in accordance with the licensee's fire plan.

- ECCS [Emergency Core Cooling System] pump rooms 1 and 2 and the decay heat exchanger pit (Fire Areas A and AB, Rooms 105, 115, and 113);
- makeup pump room and vestibule and the adjoining corridor (Fire Areas AB and G, Rooms 225, 226A, and 227);
- mechanical penetration room 2 (Fire Area A, Room 236);
- auxiliary building rooms on elevation 545 exclusive of rooms associated with ECCS (Fire Area A, Rooms 104, 104A, 106, 106A, 107, 108, 109, 109A, 110, 111, 112, 116, 117, 117A, 119, 120, 121, and 122);
- mechanical penetration room 1 (Fire Area AB, Room 208); and
- low voltage switchgear rooms (Fire Area X & Y, Rooms 428 & 429).

This review represented six quarterly inspection samples.

b. Findings

No findings of significance were identified.

1R06 Flood Protection - External Flooding (71111.06)

a. Inspection Scope

The inspectors evaluated the potential for flooding from external factors by reviewing plant design parameters pertinent to controlling the potential for flooding from external means. The evaluation included a review to check for deviations from the descriptions provided in the Updated Safety Analysis Report (USAR) for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors reviewed the conditions of roof drains on the auxiliary building and diesel generator building. That review included checking for obstructions that could prevent draining and checking that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation. The inspectors also reviewed the visible condition of sewer and culvert drains that surrounded the unit's power block and observed the general condition of the earthen breakwall that provided protection against lake wave runoff.

This review represented one inspection sample for external flooding.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q)

a. Inspection Scope

On August 22, 2006, the inspectors observed an operating crew during a crew simulator quarterly evaluation and attended the post-session licensee controller critique. The inspectors reviewed crew performance in the areas of:

- clarity and formality of communications;
- ability to take timely action in a safe direction;
- ability to prioritize, interpret and respond to alarms;
- 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 operational scenario included a loss of non-nuclear instrument bus Y-AC, failure of letdown valve isolation valve MU 2B to open, increasing condenser vacuum, and turbine failure to trip.

This review represented one quarterly inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and resolution of performance issues associated with the following three systems

- Component Cooling Water,
- Service Water, and
- Station and Instrument Air

The reviews consisted of evaluating the following activities:

- use of the condition report process in identifying deficiencies and issues with system equipment;
- whether equipment performance issues were correctly categorized for reliability per the system's scoping sheet performance criteria;
- whether the licensee was effectively tracking key parameters and identifying system trends and monitoring for signs of component failures;
- appropriateness of goals and corrective actions associated with long-term reliability;
- whether the physical condition of the system appeared consistent with status as reflected in condition reports and open work orders;
- whether the licensee's corrective actions included extent of condition; and
- appropriateness of maintenance rule system status classification with emphasis on whether current reclassification appeared appropriate for the equipment's recent history.

Additionally, the inspectors performed a walkdown of the systems and selectively discussed planned corrective actions with the system engineer.

This review represented three quarterly inspection samples.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the following activities to determine whether the appropriate risk assessments were performed prior to removing equipment for work. The inspectors determined whether the risk assessments were performed as required by 10 CFR 50.65(a)(4), and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors verified the appropriate use of the licensee risk assessment tool and risk categories in accordance with procedures and observed licensee's

personnel response to changes in planned activities. Documents reviewed are listed in the Attachment. Activities reviewed were:

- Initial risk summaries for the week of July 10, 2006, and revised schedules due to emergent issues with turbine generator electro-hydraulic control system and station air compressor 1;
- Initial risk summaries and work schedules for the week of July 31, 2006, and revised summaries due to hot weather in the licensee's service area and the resultant high load conditions on the electric transmission system; and
- Initial risk summaries for the week of September 11, 2006, and revised summaries due to emergent issues associated with a steam leak from the moisture separator re-heater 1st stage drain tank to the high pressure feedwater heater 1-5.

This review represented three inspection samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

For the three operability evaluations described in the CRs listed below, the inspectors evaluated the technical adequacy of the evaluations to ensure that Technical Specification (TS) operability was properly evaluated and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors reviewed the USAR to verify that the system or component remained available to perform its intended function. In addition, the inspectors reviewed compensatory measures implemented to verify that the compensatory measures worked as stated and the measures were adequately controlled. The inspectors also reviewed a sampling of CRs to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment.

- CR 06-02908 and 06-02911 which addressed the operability of auxiliary feedwater train 2;
- CR 06-02836 which addressed a degradation of service water pump 2;
- CR 06-03376 which addressed the acceptability of service water pump 2 after replacement with a new pump and after performance of a baseline pump test; and
- CR 06-03349 which addressed seismic contact chatter in relays for safety- related components.

This review represented four inspection samples.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following post-maintenance testing activities associated with scheduled and emergent work activities:

- CV2002B (containment isolation valve for containment pressure input to reactor protection system channel 3) valve and motor testing after preventive maintenance on July 13, 2006;
- main turbine electro-hydraulic control system testing after replacement of valve FV10 (pump auto startup pressure selector switch source) on July 23, 2006;
- SW1381 (service water pump strainer drain valve) valve and motor testing after preventive maintenance on August 1, 2006;
- CC5095 and CC5097 (CCW non-essential isolation valves) testing after valve preventive maintenance on August 3, 2006;
- Makeup Pump 2 quarterly in service test and inspection after the pump and pump breaker underwent preventive maintenance on August 22, 2006;
- auxiliary feedwater pump turbine 2 monthly test after preventive maintenance to the governor valve and the trip and throttle valve on August 23, 2006;
- service water pump 2 pump and motor testing on August 27, 2006, which included early test termination, after motor and pump replacement during the period of August 18 through August 27, 2006; and
- service water pump 2 pump and motor testing on September 2, 2006, after motor and pump replacement.

The reviews were conducted to allow the inspectors to determine if the testing was adequate for the scope of the maintenance work performed. The inspectors reviewed the acceptance criteria of the tests to ensure that the criteria was clear and that testing demonstrated operational readiness consistent with the design and licensing basis documents. Documents reviewed during this inspection are listed in the Attachment.

This review represented eight inspection samples.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors observed activities associated with a 3-day outage which began on September 6, 2006. The outage began when the reactor was manually tripped from

approximately 45 percent power due to a decreasing condenser vacuum condition and ended when the main generator was placed on-line on September 8, 2006. Throughout the brief outage, the plant was maintained in Mode 3. The inspectors reviewed transient and shutdown plant parameters applicable to Mode 3, configuration management and clearance activities, shutdown risk assessments, procedure conformance, and TS compliance. The inspectors also monitored the licensee's process for determining the cause of the decreasing condenser vacuum and subsequent corrective actions prior to startup. The inspectors also took advantage of the reduced power level to make a containment entry.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed the surveillance test or evaluated test data to determine if 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 inspectors used the documents listed in the Attachment to determine if 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 was met; and that the results of the test were properly reviewed and documented. The following surveillances were evaluated:

- DB-PF-03074, component cooling water pump 3 quarterly test on July 6, 2006;
- DB-SP-03152, auxiliary feedwater train 1 level control, interlock, and flow transmitter test on August 2, 2006;
- DB-SS-04153, DB-SS-04154, DB-OP-04158, DB-OP-04159, DB-OP-04160, DB-OP-04161, DB-OP-03006, weekly turbine testing and control room shift readings on August 13, 2006;
- DB-MI-03222, response time testing of FRCS actuation channel 2 steam generator pressure inputs on August 21, 2006; and
- DB-OP-03013, containment inspection of the containment PORC [Power-Operated Relief Valve] area, the 603', 585', and 565' elevations while at power on August 24, 2006.

This review represented five inspection samples of which one was a quarterly in service testing (IST) inspection sample.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed two temporary modifications listed below and the associated 10 CFR 50.59 screening, and compared each against the USAR and TS to determine if the modification affected the operability or availability of the affected system. The inspectors walked down the modification to ensure that it was installed in accordance with the modification documents and reviewed post-installation for actual impact on permanent systems.

- TM 06-0023, LP Turbine 1-1 Waste Water and Oil Drain Line for No. 4 Bearing; and
- TM 06-0025 Revision 0 and 1, Reheat Drain Piping (8"-GOD-55) from first stage Reheat Drain to High Pressure Feedwater Heater E5-1.

This review represented two inspection samples.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope:

The inspectors monitored the licensee's emergency preparedness drill conducted on August 17, 2006. The observations included licensee preparations, evaluation of drill conduct, review of the drill critique, and the identification of weaknesses and deficiencies. Specifically, the inspectors reviewed the licensee's scenario and preparations to determine if the drill evolution was of appropriate scope to be included in the performance indicator (PI) statistics. The inspectors observed drill activities and personnel performance primarily in the technical support center and emergency operations facility. The inspectors evaluated the effectiveness of the licensee's communications, the accuracy of situation evaluations, and the timeliness of required reporting (simulated) of event-related information to the appropriate agencies. Finally, the inspectors reviewed the licensee's technical support center drill critique to determine if weaknesses and deficiencies were acknowledged and if appropriate corrective actions were identified.

This review represented one inspection sample.

b. Findings:

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

a. Inspection Scope

Cornerstone: Initiating Events

The inspectors sampled licensee submittals for the PIs listed below for the period from the last quarter 2004 through the second quarter 2006. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 4, were used to verify the basis in reporting for each data element.

- Scrams With Loss of Normal Heat Removal
- Unplanned Transients per 7000 Critical hours

The inspectors reviewed portions of operating logs, licensee event reports (LERs), and inspection reports for consistency with the PIs reported values.

This review represented two inspection samples of the PIs listed above.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Daily Review

a. Inspection Scope

The inspectors performed a daily screening of items entered into the licensee's corrective action program (CAP). This screening was accomplished by reviewing documents entered into the CAP and review of document packages prepared for the licensee's daily Management Alignment and Ownership Meetings.

b. Findings

No findings of significance were identified.

.2 Annual Sample: Review of Operator Workaround Program

a. Inspection Scope

The inspectors reviewed the licensee's program for identifying, assessing, and correcting conditions that required operators to perform more steps to accomplish an activity than would be required by the plant and system design or by the plant's procedures. The

inspectors determined whether the licensee was identifying operator workaround problems at an appropriate threshold and was entering identified issues in the corrective action program. The inspectors reviewed the items that were identified as workarounds. Included in the review was the consideration of the timeliness of correction of the workarounds, the operability of the system impacted by the workaround, and potential extent of condition. Additionally, the inspectors reviewed documents that provided direction for identifying and correcting operator workarounds.

b. Assessment and Observations

Licensee Work Process Guideline 2 (WPG-2), "Operations Equipment Issues," Revision 06, dated December 3, 2003, provided "a method to identify, evaluate, report and track plant equipment and support equipment deficiencies that significantly impact routine plant operations or could affect the plant during abnormal or emergency situations." Additionally, the guideline provided a definition of a control room deficiency, an operator workaround level 1, and an operator workaround level 2. This guideline was not classified as a quality or a non-quality procedure on the cover sheet and was not listed in the licensee's data base that identifies classification of procedures. Discussion with licensee personnel indicated that this guideline was the last remaining document from a set of guidelines and would eventually be cancelled. The current version of WPG-2 referenced another guideline that was cancelled in 2004 and a work control procedure that was cancelled in 2005.

Procedure NOP-WM-1002, "Work Management Screening Process," supplemented guideline WPG-2 by providing guidance for assigning priorities for work orders related to operator workarounds and control room deficiencies. The licensee did not identify any other procedures that addressed operator workarounds. Classification of workarounds and priority assigned to work orders appeared consistent with the requirements contained within existing guidance and procedures.

The inspectors noted that the daily-reviewed operations shift turnover documents contained listings of control room deficiencies and operator workarounds. As a minimum, the deficiencies and operator workarounds, level 1 and level 2, were mentioned during the first shift turnover meeting of an operations shift that returned from days off of shift work. In addition to those reviews, operations management reviewed the status of non-outage control room deficiencies and operator workarounds with management representatives from engineering, maintenance, and work control. Those reviews were normally scheduled weekly.

On a monthly basis, the licensee posted bar graphs representing the number of operator workarounds, operator burdens, and control room deficiencies. The bar graphs also showed licensee progress in addressing the listed items and displayed goals. The graph displaying "operator workarounds" showed items classified in WPG-2 as level 1 workarounds. The graph displaying "operator burdens" showed items classified in WPG-2 as level 2 workarounds.

Inspectors' review of operator workarounds and control room deficiencies did not identify any items as improperly classified or that appeared to be scheduled inappropriately. However, the inspectors questioned licensee personnel on why a high limit stop issue associated with the main generator automatic voltage regulator had not been classified as a workaround or control room deficiency. The licensee indicated that the issue was not a workaround or deficiency because grid conditions had not required adjustments that challenged the high limit stop. The high limit stop was unexpectedly reached on June 24, 2006, while making procedure-required range checks coming out of the planned outage and the licensee was not able to adjust the automatic voltage to the level desired. Because the voltage regulator issue was not listed as an operator workaround or a control room deficiency, the work order was not given a high priority and, although on the forced outage list, was not ready to be worked during a forced outage from September 6 through the September 9, 2006. Shortly after restart from that forced outage, issues with the automatic voltage regulator high limit stop and the inability to attain desired voltages required the work order preparation to be expedited. Corrective maintenance adjustments to the automatic voltage regulator were made on September 11, 2006, while the generator was connected to the utility's grid.

Guideline WPG-2 required that quarterly reviews of the "safety significance of the aggregate impact" of open workarounds and control room deficiencies be documented. The licensee was only able to provide a documented review for the fourth quarter of 2005 and the third quarter of 2006. The licensee documented the non-compliance with WPG-2 guidelines in CR 06-6709. A similar issue was documented in 2005 in CR 05-03063. The inspectors' review of the aggregate impact reviews presented in December 22, 2005, and September 15, 2006, did not identify any inconsistencies or new issues.

c. Conclusions

No findings of significance were identified. The licensee's program provided a means for identifying and prioritizing operator workarounds, highlighting the items to plant management, and tracking the items until they were corrected. Deficiencies in the licensee's implementation of the guidelines did not appear to adversely impact the ability of the licensee to identify and correct operator workaround issues.

This review represented one inspection sample.

4OA3 Event Followup (71153)

.1 Loss of Normal Control Room Cooling

a. Inspection Scope

The inspectors responded to a loss of 120 volts alternating current (VAC) bus ALL on August 3, 2006. The loss of the bus was caused by a 480 VAC feeder breaker opening because of a grounded component in one of the circuits being fed. The loss of the circuits caused the loss of the control room nonsafety-related chillers which provided normal cooling. The inspectors observed licensee personnel actions in directing activities to determine the cause and extent of equipment loss and in providing actions and in taking

precautions to minimize heat buildup in electronic components in the control room and electrical penetration room 1. Additionally, the inspectors reviewed the licensee's response to spurious alarms received potentially due to heat buildup. The inspectors also reviewed the operators' and plant response to a 3 percent runback due to heat issues that caused transient faults in integrated control system electronic modules.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.2 Manual Reactor Trip in Response to Decreasing Condenser Vacuum

a. Inspector Scope

On September 6, 2006, inspectors responded to a operator-initiated manual reactor trip from approximately 45 percent power in response to unexpected decreasing condenser vacuum. The decreasing condenser vacuum was caused by the failure of one of four waste water and oil drain lines, commonly referred to as "slop drains." The lines were routed through the condenser. The inspectors observed licensee personnel actions in directing reactor trip recovery actions. Inspectors also observed the licensee's problem solving team created to determine the cause of the decreasing condenser vacuum, and their process to implement corrective actions prior to plant startup.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.3 (Closed) LER 05000346/2005-005-00: Boric Acid Addition System Unable to Meet TS Required Boration Rate

On September 27, 2005, and November 3, 2005, the licensee, during a review of Calculation 034.009, "Minimum Boric Acid Flow for TS 3.1.1.1," determined that assumptions used in the calculation were not conservative by not assuming the most limiting conditions permitted by plant operating procedures. This calculation was originally completed in 1975, but was revised in 2005 with essentially the same non-conservative assumptions. The result of the non-conservative assumptions was that, under certain plant conditions, a boric acid addition system pump, as installed, would not deliver the TS 3.1.1.1 flow requirement of 25 gallons per minute (gpm), with 7875 parts per million (ppm) boron, or its equivalent, if required to return reactor shutdown margin to greater than or equal to 1 percent $\Delta k/k$.

The licensee's review of about 3 years of operating data determined that there were periods of time, in excess of 72 hours, where neither of the two installed boron acid transfer pumps would provide the flow required by TS 3.1.1.1 because of the existing plant

conditions. The licensee stated that if the calculation issues had been known at those times, both boric acid pumps should have been declared inoperable. Technical Specification 3.1.2.7 required plant action when a boric acid pump or flowpath was not available for 72 hours. The specified actions were not taken.

The licensee was not able to determine the reasons for the non-conservative assumptions during the plant's original design phase. The licensee stated that the existing design processes have more rigor and controls than earlier processes. An extent of condition review did not identify similar issues. The licensee modified plant procedures to provide direction to operators on the plant conditions necessary to ensure the ability to meet the requirements of TS 3.1.1.1. The issue was more than minor because it involved TS violations. The finding affected the Mitigating Systems Cornerstone and was considered to have very low safety significance (Green) because the boric acid reactivity control capability was available at a reduced rate from this system and from other systems. This licensee-identified finding involved a violation of TS 3.1.2.7, "Boric Acid Pumps - Operating." The enforcement aspects of the violation are discussed in Section 4OA7. This LER is closed.

This review represented one inspection sample.

.4 (Closed) Licensee Event Report (LER) 05000346/2006-001-01: Emergency Diesel Generator Engine Damaged Due to Improper Torquing of Lock Nut

On January 20, 2006, the licensee identified damage to the Number 4 cylinder valve bridge of emergency diesel generator 2 (EDG2). The damage was identified while investigating a tapping noise, following engine overhaul, that was not investigated when first heard. The event was documented by the licensee in LER 05000346/2006-001-00 and by the NRC in IR 05000346/2006003. Inspection Report 05000346/2006003 also provided the results of the NRC's SDP Phase 2 and 3 analyses, documented NCV 05000346/2006003-03, and closed the LER.

Licensee Event Report 05000346/2006-001-01, submitted in May 2006, presented the results of an evaluation into the decision that the EDG2 tapping noise, when first heard, did not warrant immediate investigation. The licensee determined that a structured problem solving process, which was not used, would have increased the probability of the tapping noise issue being investigated more promptly. A procedure, outlining a structured problem solving process, became effective in June 2006. The inspectors' review of the licensee's investigation and the procedure with the more structured process did not identify any items of significance that had not been addressed in previous inspection reports. This LER is closed.

This review represented one inspection sample.

.5 (Closed) LER 05000346/2006-002-00: Ultrasonic Examination Identifies Axial Flaw Indication in Reactor Coolant Pump Drain Line Weld

On March 18, 2006, while shut down for the fourteenth refueling outage, during ultrasonic examination of the 2.5-inch diameter reactor coolant pump 1-1 cold leg

drain line nozzle-to-elbow dissimilar metal butt weld, the licensee detected an axial oriented flaw at least 0.25 inches in length and of unknown depth. No evidence of through-wall leakage was observed, and the licensee attributed the most probable cause of this flaw to inadequate repair welding practices during original plant construction. A definitive cause could not be identified because the flawed weld was not removed for metallurgical evaluation. However, the licensee determined that the probable cause for the crack was the less than adequate welding process used during initial plant construction. This resulted in a latent flaw induced by welding or a primary water stress corrosion crack attributed to weld residual stress, environment, and susceptible materials. The licensee performed a full structural weld overlay repair of the affected area and determined that the safety significance was minimal because the axial crack was detected by nondestructive examination prior to reaching a critical flaw size. The inspectors reviewed the licensee's corrective actions for this issue as documented in CR 06-01091 and CR 06-01151, and found the corrective actions adequate. This LER is closed.

This review represented one inspection sample.

4OA4 Mitigating Systems Performance Index Verification (TI 2515/169)

The inspectors reviewed elements of the licensee's implementation of the Mitigating Systems Performance Index (MSPI). The inspectors' activities were governed by Temporary Instruction 2515/169, "Mitigating Systems Performance Index Verification." The review activities continued into the next inspection period. The results of the complete review will be documented in a future inspection report.

4OA5 Other Activities

.1 Licensee Activities and Meetings

The inspectors observed select portions of licensee activities and meetings. The activities that were sampled included:

- Davis-Besse Site Oversight's second quarter exit meeting on July 11, 2006;
- Corporate Nuclear Review meetings and activities on July 12, 2006, and July 14, 2006;
- Plant Operating Review Committee meeting on July 25, 2006;
- Corrective Action Review Committee meeting on August 7, 2006; and
- Entrance meeting on August 14, 2006, and debrief meetings on August 18 and 25, 2006, of the Independent Assessment Team reviewing the licensee's corrective action program.

No items of significance were identified.

.2 Evaluation of the 2006 Independent Operations Assessment Final Report (93812)

a. Inspection Scope

The March 8, 2004, Confirmatory Order Modifying License No. NPF-3 (EA-03-0214) required, in part, that the licensee perform annual independent assessments, for a period of 5 years, in the areas of operations performance; organizational safety culture, including safety conscious work environment; corrective action program implementation; and engineering program effectiveness.

On August 28, 2006, the licensee submitted the "Independent Assessment Report of Operations Performance for the Davis-Besse Nuclear Power Station, Year 2006." The inspectors reviewed the report for consistency with assessment results presented at the assessment exit and debrief meetings, and with original drafts of the report. Additionally, the inspectors verified that the report adequately covered areas identified in the assessment plan, that conclusions were consistent with and were adequately supported by information in the report, and that the licensee entered all deficiencies identified in the report into their corrective action program.

b. Observations and Findings

The independent assessment of Operations Performance and the final report from that assessment addressed the following topics:

- Shift turnovers;
- Control manipulations;
- Communications;
- Interdepartmental interfaces;
- Procedural usage;
- Awareness of plant and equipment status and workarounds;
- Pre-job briefings;
- Non-shift Operations management interface and oversight;
- Shift management command and control;
- Shift management's evaluation, prioritization, and disposition of maintenance activities and emergent issues;
- Operations behaviors in the areas of questioning attitude and safety;
- Shift handling of off-normal operations;
- Observation of operator simulator training to compare crew performance, demeanor, and communication skills with actual control room operations;
- A review of condition reports associated with the Areas In Need of Attention documented in the August 2005 Operations Performance Assessment;
- A review of selected condition reports and associated corrective actions related to Operations Department performance; and
- A review of selected licensee self-assessment activities associated with Operations.

These topics were grouped into five general areas:

- Shift and Meeting Observations;
- Interviews;
- Condition Report Review;
- Licensed Operator Continuing Training; and
- Davis-Besse Self-Assessments.

Overall, the assessment team concluded that the Operations Department performance was rated Effective. 'Effective' has the meaning that performance, programs, and processes were sufficient to obtain the desired results with consistency and effectiveness, but that there may be one or several specific areas where improvement was needed and potentially other items that required additional attention.

The majority of individual items and topics reviewed by the team were assessed as 'Effective.' No areas were assessed as 'Ineffective.' The following items were rated as 'Marginally Effective:'

- Refueling outage configuration control
- Level of cause determinations for configuration control events

The assessment report identified no Areas For Improvement. 'Areas for Improvement' were areas that required improvement to obtain desired results with consistency and effectiveness. Since there were no issues that rose to the level of an Area For Improvement, the licensee did not include a formal corrective action plan as part of the Independent Assessment Report submittal. Minor issues addressed in the report were documented in the licensee's corrective action program.

c. Conclusions

The licensee complied with the year 2006 requirement for an independent assessment of the Operations Performance as described in the March 8, 2004, Confirmatory Order. The results of the assessment, including the overall assessment, appear consistent with the information reviewed and documented in the final report. The overall independent assessment of Operations Performance was consistent with NRC inspection findings associated with this area of licensee performance. No findings of significance were identified.

.3 Evaluation of the 2006 Independent Safety Culture/Safety Conscious Work Environment Assessment Plan

a. Inspection Scope

FirstEnergy Nuclear Operating Company's (FENOC) July 14, 2006, letter addressed the NRC's March 2004 Confirmatory Order requirement for Davis-Besse to perform an annual independent outside assessment of safety culture/safety conscious work environment (SC/SCWE). The letter stated that FENOC had selected a different independent outside organization to perform the 2006 SC/SCWE assessment. Specifically, the 2006 SC/SCWE assessment would be conducted by Synergy Consulting Services Corporation (Synergy).

As part of the NRC's continuing oversight inspection activities at Davis-Besse, members of the NRC's Davis-Besse Management & Human Performance inspection team met with representatives from FENOC and Synergy on September 21, 2006, at NRC Headquarters in Rockville, MD. During the information exchange, the team obtained information on Synergy's SC/SCWE assessment methodology. The discussions centered around Synergy's data collection and assessment techniques. The discussions focused on how the methodology would meet the 2004 Confirmatory Order requirements and how it comported with information in NRC Regulatory Information Summary (RIS) 2006-13 on Safety Culture. In addition, Synergy's evaluation approach was discussed in light of the inspection guidance in the NRC's draft inspection procedure (IP) 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiply Yellow Inputs, or One Red Input."

b. Observations and Findings

Synergy's standard methodology relied almost exclusively on an all-hands voluntary written survey, followed by a detailed analysis of the survey results. To meet the requirements of the Confirmatory Order and to be more consistent with RIS 2006-13 and draft IP 95003, Synergy had modified its standard assessment methodology. Specifically, Synergy expanded its survey questions, documentation reviews, and personnel interviews. The changes, according to Synergy, allowed the methodology to meet two specific independent assessment objectives: "Effectiveness of DBNPS Actions to Address Previously Identified Areas for Improvement," and "Appropriateness of Self-Criticality Demonstrated by the DBNPS Organization." In addition, the changes also addressed "Specific RIS 2006-13 nuclear safety component attributes."

During the information exchange, Synergy addressed its gap analysis of its method versus RIS 2006-13 and draft IP 95003. The gap analysis identified where their process already addressed specific safety culture components and where process augmentation would assist in more fully covering other safety culture components. The discussion included specific examples that the team briefly reviewed. It was noted that while the team briefly reviewed a number of examples, a more thorough review will be conducted during the team's inspection activities following completion of Synergy's assessment.

c. Conclusions

The team concluded that the Synergy safety culture assessment tool addressed all of the safety culture components discussed in RIS 2006-013. Further, the modified assessment tool covered the survey, documentation review, and interview assessment techniques outlined in draft IP 95003. Overall, the team concluded that Synergy's modified safety culture assessment tool appeared to be a viable methodology to address the March 8, 2004, Confirmatory Order.

.4 Review of Engineering Program Effectiveness Independent Assessment Plan and Implementation

a. Inspection Scope

Inspection activities were performed to verify the licensee's compliance with the requirement for independent assessments, as described in the March 8, 2004, Confirmatory Order Modifying License No. NPF-3. This was the third of five required annual independent assessments of the engineering program. The inspectors verified that the licensee had submitted the required inspection plan 90 days prior to the performance of the assessment, evaluated the plan, and observed on-site implementation of the assessment to verify plan completion.

b. Observations and Findings

The licensee submitted its plan (start date of September 11, 2006) in a letter to the NRC dated June 12, 2006. The inspectors reviewed the licensee's letter describing the assessment plans and evaluated the scope and depth of the plans, including the credentials, experience, and independence of the designated assessors. The inspectors verified that the individuals designated to perform the assessment were sufficiently independent from FENOC and that they brought the appropriate credentials and experience necessary to accomplish the assessment.

The plan included two team members on site for a period of 1 week each and the other four team members on site for both weeks. The purpose of the plan was to provide an independent and comprehensive assessment of the Engineering Program effectiveness. The plan included details to assess Engineering effectiveness in the following areas:

- Plant Modification Process;
- Calculation Process;
- System Engineering Programs and Practices;
- Corrective Action Program Implementation;
- Actions taken in response to Areas in Need of Attention identified during the 2005 Independent Assessment of Engineering; and
- Self Assessment Effectiveness.

c. Conclusions

The scope and depth of the proposed plan appeared adequate to accomplish the objective of assessing Engineering Program performance.

The NRC inspectors observed portions of the assessment activities during the second on-site week including team interviews of plant staff. The interviews were found to be thorough and probing with very open communication between plant staff and the team. The inspectors also met with the team members to discuss implementation of the approved assessment plan, and performed independent evaluation of a sample of engineering products reviewed by the team. The team conducted a debrief at the end of on site activities and provided preliminary conclusions. The team's preliminary conclusion was that the technical quality of Engineering products and plant support was

generally good to excellent with a continuing trend towards improvement. No Areas for Improvement (AFIs) were identified by the team. The NRC inspectors found the implementation of the assessment plan to be acceptable and will review the final team report when it becomes available.

4OA6 Meeting, Including Exit

Exit Meeting Summary

On September 27, 2006, the resident inspectors presented the inspection results to Mr. B. Allen and other members of the licensee's staff, who acknowledged the findings. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

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

- Technical Specification 3.1.1.1 required in Mode 1 through 4, if shutdown margin was less than 1 percent $\Delta k/k$, immediate boration at greater than 25 gpm of 7875 ppm boron or its equivalent. If that requirement could not be met because of plant or procedure requirements, boric acid pumps should be considered inoperable and TS 3.1.2.7 required restoration to operable status within 72 hours or commencement of shutdown activities. Contrary to the requirements of TS 3.1.2.7, shutdown activities were not commenced for periods where plant conditions rendered both boric acid pumps inoperable for periods in excess of 72 hours. This was identified in licensee CR 05-05184 and CR 05-05559. The finding was of very low safety significance because boric acid addition capability was available, at a reduced rate, via a boric acid pump, and from injection from the borated water storage tank via a makeup pump or a HPI pump.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Allen, Director, Plant Operation
M. Bezilla, Site Vice President
B. Boles, Director, Maintenance
J. Grabnar, Director, Engineering
C. Hawley, Manager Site Projects
R. Hovland, Manger, Technical Services
R. Hruby, Manager, Nuclear Oversight
J. Rinckel, Vice-President, Fleet Oversight
S. Plymale, Manager, Plant Engineering
R. Schrauder, Director, Performance Improvement

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Open and Closed

05000346/2006004-01	FIN	Licensee Actions Ineffective in Ensuring Material Around Switchyard and Under Power Lines Properly Stored for High Wind Conditions
---------------------	-----	--

Closed

05000346/2006-001-01	LER	Emergency Diesel Generator Engine Damaged Due to Improper Torquing of Lock Nut
05000346/2005-005-00	LER	Boric Acid Addition System Unable to Meet TS Required Boration Rate
05000346/2006-002-00	LER	Ultrasonic Examination Identifies Axial Flaw Indication in Reactor Coolant Pump Drain Line Weld

LIST OF DOCUMENTS REVIEWED

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

1R01 Adverse Weather Protection

CR 06-00027; Lack of Housekeeping Near the Switchyard

Field Observation Card DBF2006-1233; Housekeeping, Outside/Yards; June 15, 2006

Field Observation Card DBF2006-1130; Housekeeping, Outside/Yards; May 31, 2006

Field Observation Card DBF2006-1406; Housekeeping, Outside/Yards; July 14, 2006

Field Observation Card DBF2006-1341; Housekeeping, Outside/Yards; July 1, 2006

Manager-Operations Memorandum; Housekeeping Responsibilities Revision 5; dated September 27, 2005

NG-DB-00215; Material Readiness and Housekeeping Inspection Program; Revision 7

1R04 Equipment Alignment

CR 03-04171; DH 2733 Leaks By

CR 03-08623; Valve Seat Damage DH13A

CR 06-01419; Unexpected Lowering of DH Pump 1 Suction Pressure

CR 06-03252; Instrument Valves Out of Position Prior to Containment Spray Pump 2 Quarterly Test

DB-OP-02523; Component Cooling Water System Malfunctions; Revision 5

DB-OP-06011; High Pressure Injection System; Revision 15

DB-OP-06012; Decay Heat and Low Pressure Injection System Operating Procedure; Revision 26

DB-OP-06013; Containment Spray Operating System; Revision 16

DB-OP-06261; Service Water System Operating Procedure; Revision 26

DB-OP-06505; Control Room Emergency Ventilation System Procedure; Revision 9

DB-OP-06262; Component Cooling Water System Procedure; Revision 15

DB-OP-06233; Auxiliary Feedwater System; Revision 20

Drawing M-027A; P&ID [Piping and Instrumentation Diagram] Auxiliary Building Non Radioactive Areas and Control Room HV and A/C [Heating, Ventilation and Air Conditioning] Air Flow Diagram; Revision 76

Drawing M-006D; P&ID Auxiliary Feedwater System; Revision 50

Drawing M-033A; High Pressure Injection System; Revision 36

Drawing M-033B; Decay Heat Removal/Low Pressure Injection System Train 1; Revision 46

Drawing M-033C; Decay Heat Removal/Low Pressure Injection System Train 2; Revision 21

Drawing —034; Emergency Core Cooling System, Containment Spray and Core Flooding Systems; Revision 61

Drawing —035; Spent Fuel Pool Cooling System; Revision 51

Drawing M-036A; P&ID Component Cooling Water System; Revision 27

Drawing M-036B; P&ID Component Cooling Water System; Revision 33

Drawing M-036C; P&ID Component Cooling Water System; Revision 26

Drawing M-234D; Containment Spray System Isometric; Revision 17

Drawing OS-003; High Pressure Injection System; Revision 28

Drawing OS-021 Sheet 1; Component Cooling Water System; Revision 33

Drawing OS-021 Sheet 2; Component Cooling Water System; Revision 23
Drawing OS-021 Sheet 3; Component Cooling Water System; Revision 11
Drawing OS-32B; Control Room Emergency Ventilation System; Revision 16
System Health Report; DB-SUB049-01/049-02 Decay Heat and Low Pressure Injection; Report Run dated August 2, 2006
USAR; Section 9.2.2 Component Cooling Water System; Revision 25

1R05 Fire Protection

CR 06-02835; Penetration 555-AB3-N-002/105-S-082 Does Not Meet Seal Detail (NRC Identified)
Davis-Besse Nuclear Power Station Fire Hazard Analysis Report
DB-FP-00007; Control Of Transient Combustibles; Revision 7
DB-FP-00009; Fire Protection and Fire Watch; Revision 8
Drawing A-221F; Fire Protection General Floor Plan EL 545' and 555'; Revision 8
Drawing A-222F; Fire Protection General Floor Plan EL 565'; Revision 13
Drawing A-224F; Fire Protection General Floor Plan EL 603'; Revision 21

1R06 Flood Protection

Calculation C-NSA-019-01-002; Water Ponding on Auxiliary Building Roofs at Probable Maximum Precipitation Conditions; Revision 0
RA-EP-02880; Internal Flooding; Revision 3
Drawing C-30; Roads, Drainage, Paving, Fencing; Revision 50
Drawing C-38; Circulating Water Intake System Construction Area Plan; Revision 10
USAR Section 2.4.2.2 Flood Design Considerations; Revision 0
USAR Section 2.4.3; Probable Maximum Flood (PMF) on Streams and Rivers; Revision 5
USAR Section 3.4; Water Level (Flood) Design Criteria; Revision 2

1R11 Licensed Operator Requalification Program

DBBP-TRAN-0017; Conduct of Simulator Training; Revision 2
Davis-Besse Emergency Response Integrated Drill Manual; Revision 0

1R12 Maintenance Effectiveness

Calculation C-ME-016.04-041; Evaluation of the Temperature Increase of the CCW System
CR 06-00958; Unexplained Increase in Opening Stroke time Value for CC1467
CR 06-01114; CC1467 Failed to Operate as Expected
CR 06-01963; Decay Heat System Temperature Increase During DH207 Check Valve Flow Testing
CR 06-02093; SAC [Station Air Compressor] 2 Trouble/Trip Alarm - 2nd Stage high Temperature
CR 06-02603; CC5096 Will Not Close From the Control Room or Local Switch
CR 06-02820; SAC2 Tripped Twice Due to High Oil Filter Differential Pressure
CR 06-02822; SAC 1 Tripped
CR 06-02824; SAC 2 Failed to Start after SAC 1 Tripped
CR 06-6187; Maintenance Rule (a)(1) Evaluation for Station and Instrument Air System
DB-PF-00003; Maintenance Rule; Revision 8
D-B System Health Report, Component Cooling Water Window; Fourth Quarter, 2005
D-B System Health Report, Component Cooling Water Window; First Quarter, 2006

D-B System Health Report, Station and Instrument Air Window, Second Quarter, 2006
D-B System Health Report, Service Water Window; Second Quarter, 2006
Maintenance Rule Program Manual; Revision 20
Maintenance Rule Expert Panel Minutes 02/05 thru 06/06
MRMP 20; Maintenance Rule Scoping Sheets for Component Cooling Water, Station and Instrument Air, and Service Water
Problem Solving Plan for CR 06-2824 and CR 06-2822; Station Air Compressor SD-016; System Description For Component Cooling Water

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

DBBP-OPS-0003; On-line Risk Management Process; Revision 2
Maintenance Risk Summaries for the Week of July 10, 2006; Revisions 1 through 6
Maintenance Risk Summaries for the Week of July 31, 2006; Revisions 1 and 2
Maintenance Risk Summaries for the Week of September 11, 2006; Revisions 1 and 2
NOP-OP-1007; Grid Risk Determination; Revisions 2 and 4
Work Implementation Schedule, Subsystem Sort; Tuesday, July 11, 2006

1R15 Operability Evaluations

Calculation C-NSA-011.01-016; Service Water System Design Basis Flowrate Analysis and Testing Requirements; Revision 0
Calculation C-NSA-011.01-016, Addendum A01; Service Water System Design Analysis and Testing Requirements; Revision 0
CR 06-02836; DB-PF-03023 Service Water Pump 2 Quarterly Test Failure
CR 06-02908; AF68 Reverse Flow Test Failure
CR 06-02911; MS5889B Stroke Time Outside Of The Expected Range
CR 06-03013; Service Water Pump 2 Quarterly Test Failure
CR 06-03376; Evaluation of Service Water Pump3-2 Baseline Test Data
CR 06-03449; AREVA EQ Test Report QR 03-11 Test Anomaly, NOA 1506-16, Seismic Contact Chatter
CR 05-04109; AREVA EQ Test Report QR 03-11 Test Anomalies
CR 06-6552; Impact on Plant Systems of Contact Chatter During Seismic Qualification Testing
CR 06-6575; Incorrect Problem Description in CR 06-03349 (NRC Identified)
DB-PF-00201; Inservice Testing Of Pumps And Valves; Revision 7
DB-PF-03023; Service Water Pump 2 Testing; Revision 14
DB-PF-03160; AFP 2 Quarterly Test; Revision 16
DB-PF-03162; AFW Train 2 Check Valve Tests; Revision 10
DB-PF-03215; Baseline Testing of Service Water Pump 2 in Modes 1 Through 4; Revision 3
DB-PF-06704, Curve CC 14.73K; Service Water Pump 2 (TDH vs. Flow Acceptance Criteria for Quarterly Surveillance Test); Revisions 17 and 18
ISTB3; Pump and Valve Basis Document Volume III Stroke Time Basis; Revision 28
Manual ISTB2, Volume II; Pump and Valve Basis Document; Revision 3
Operations Evolution Order for Work Order 200221701; Check for Valve Leakage Prior to SWP 2 Baseline Test; September 2, 2006

1R19 Post-Maintenance Testing

Clearance NDB-SUB093-01-003; EHC Pmp No. 1 and 2 Auto Startup Pressure Switch Source; July 23, 2006

CR 06-03013; Service Water Pump #2 Quarterly Test Failure

CR 06-03326; Service Water Pump #2 Moisture Intrusion

CR 06-03330; Service Water Pump #2 Problem Solving Plan Implementation

CR 06-03332; 24 Inch Annubar/Foxboro M&TE Not Functional

DB-ME- 09008; Miscellaneous Electrical Maintenance; Revision 4

DB-ME- 09014; 13.8 and 4.16 KV Westinghouse DHP Breakers; Revision 6

DB-PF-03215; Baseline Testing of Service Water Pump 2 in Modes 1 Through 4; Revisions 0, 1, 2, and 3

DB-PF-03272; Post Maintenance Valve Test; Revision 3

DP-OP-01000; Operation of Station Breakers; Revision 16

DB-OP-06233; Auxiliary Feedwater System, section 4.12; Revision 20

DB-PF-09301; Preventive Maintenance For Type SMB Limitorque Operations; Revision 3

DB-PF-09307; Operation of Motor Monitoring Equipment; Revision 3

DB-SP-03376; Quarterly Makeup Pump 2 Inservice Test and Inspection; Revision 7

DB-SP-04159; AFP [Auxiliary Feedwater Pump] 2 Monthly Test; Revision 6

DB-SS-04164; EHC [Electrohydraulic] Hydraulic Power Unit Test; Revision 6

Drawing OS-023, Sheet 2; Turbine Electrohydraulic Control System; Revision 25

Drawing OS-020, Sheet 1; Service Water System; Revision 72

ISTB3; Pump and Valve Basis Document Volume III Stroke Time Basis; Revision 28

Operations Evolution Order for WO 200221701; Check for Valve Leakage Prior to SWP 2 Baseline Test

WO 200096482; PM 5255 BF1168 Replace Agastat Relay

WO 200103516; PM5268 D217 Replace GP/EGP Relays

WO 200125574; AD105 Remove and Replace Breaker

WO 200126538; PM0171 Lubricate Makeup Pump and Motor

WO 200126231; Service Water Pump Strainer 3 Drain Valve Motor

WO 200221701; PM 0923 Rebuild SW Pump 2;

1R22 Surveillance Testing

CR 06-03017; MWE [Megawatt Electric] Change During DB-SS-04160 Speed Control Amplifier Test

CR 06-03305; Trending - Performance Enhancement for AFPT [Auxiliary Feedwater Pump Turbine] #2

CR 06-03316; Green Dust During Containment Entry At Power On 565' Elevation

CR 06-03275; NRC Inspectors Concern with the Potential for Preconditioning

DB-MI-03222; Response Time Test of SFRCS [Steam Feed Rupture Control System] Actuation Channel 2 Steam Generator Pressure Inputs; Revision 5

DB-OP-03006; Miscellaneous Instrument Shift Check; Revision 23

DB-OP-03013; Containment Daily Inspection & Containment Closeout Inspection; Revision 3

DB-PF-03074; Component Cooling Water Pump 3 Test; Revision 9

DB-PF-06704; Pump Performance Curves; Revision 17

DB-SP-03152; AFW [Auxiliary Feedwater] Train 1 Control, Interlock, and Flow Transmitter Test; Revision 16

DB-SS-04153; Turbine-Generator Overspeed Trip Mechanism Test; Revision 2

DB-SS-04154; Turbine-Generator Backup Overspeed Test Circuit Test; Revision 5
DB-SS-04158; Thrust Bearing Wear Detector Periodic Test; Revision 1
DB-SS-04159; 24 Volt DC Master Trip Solenoid Valves Test; Revision 3
DB-SS-04160; Backup Speed control Amplifier Test; Revision 2
DB-SS-04161; Power/Load Unbalance Test; Revision 5

1R23 Temporary Plant Modifications

TM [Temporary Modification] 06-0023; LP Turbine 1-1 Waste Water and Oil Drain Line for No. 4 Bearing; Revision 0
ODMI; Resolution of Waste Water/Oil Line Condenser Vacuum Leak and Continued Operation; Revision 1
TM 06-0025; Reheat Drain Piping (8"-GBD-55) from First Stage Reheat Drain to High Pressure Feedwater Heater E5-1; Revision 0
TM 06-0025; Reheat Drain Piping (8"-GBD-55) from first stage Reheat Drain to High Pressure Feedwater Heater E5-1; Revision 1

1EP6 Drill Evaluation

Davis-Besse Emergency Response Integrated Drill Manual; 2006
DP-OP-02544; Security Events or Threats; Revision 5
RA-EP-01500; Emergency Classification; Revision 6

4OA1 Performance Indicator (PI) Verification

Performance Indicator Data Input Sheets for Scrams With Loss of Normal Heat Removal
October 2004 though June 2006
Performance Indicator Data Input Sheets for Unplanned Transients per 7000 Critical Hours
October 2004 though June 2006

4OA2 Identification and Resolution of Problems

CR 05-03063; Quarterly Aggregate Impact Reviews of Workarounds and Deficiencies
CR 06-6709; Failure to Write Quarterly Report on Work Arounds and CTRM [Control Room] Deficiencies
D-RPO-15; Control Room Deficiencies Bar Graph; August, 2006
D-RPO-16; Operator Work Arounds Bar Graph; August, 2006
D-RPO-17; Operator Burdens Bar Graph; August, 2006
NOP-WM-1002; Work Management Screening Process; Revision 1
Operator Work Arounds and Control Room Deficiencies Quarterly Aggregate Impact Report; December 22, 2005
Operator Work Arounds and Control Room Deficiencies Quarterly Aggregate Impact Report; September 15, 2006
WPG-2; Operations Equipment Issues; Revision 6

4OA3 Event Followup

Calculation 034.009; Minimum Boric Acid Flow for TS 3.1.1.1; Revision 3
Calculation C-NRE-040.01-004; Hot and Cold Shutdown RCS Boron Concentration and BWST Requirements; Revision 0
CR 02-01612; Condenser Vapor Interconnect Water Seal Leakage
CR 02-05280; ORR - System Condition report For Main Condenser
CR 05-01320; Confirmatory Screen - OE20032; Loss of Condenser Vacuum
CR 05-01944; Confirmatory Screen - OE 20112
CR 05-05184; Boron Injection Flowrate Calculation 034.009 Non-Conservative Assumptions
CR 05-05559; Boric Acid Pumps Operability Standing Order 05-013
CR 06-00583; Further Actions Regarding EDG Tapping Noise on January 13, 2006
CR 06-01091; RCP 1-1 Cold Leg Drain Nozzle; dated March 19, 2006.
CR 06-01151; Axial Indication on the RCP 1-1 Cold Leg Drain Line; dated March 21, 2006.
CR 06-02075; DB Alloy 600 program; dated April 24, 2006.
CR 06-02942; Unexpected Loss of 480 Volt Non-Essential Busses F23A and F23B
CR 06-02943; Issues with Control Room Chiller Unit 1 (S12-1) During Loss of F23A/F23B
CR 06-02944; Loss of Control Room Chiller Unit 2 Related to Loss of F23A/F23B
CR 06-02946; Problems with Control Room Normal Ventilation Train 2 During Restoration
CR 06-02948; Extended Time with Inverter YVB Out of Sync
CR 06-02945; Issues with the Integrated Control System Causing a Loss of ~30 MWE
CR 06-02947; High Temperature in ICS [Integrated Control System] Cabinet Leads to a Power Reduction of Approximately 3 Percent FP [Full power]
CR 06-6003; Manual Reactor Trip Due to Lowering Condenser Vacuum
DB-OP-0251; Loss of AC [Alternating Current] Bus Power Sources; Revision 11
DB-OP-02533; Control Room Emergency Ventilation System Load Shedding; Revision 6
DP-OP-06001; Boron Concentration Control; Revision 10
DB-PM-1796; E7-1; Inspect Steam Side of HP [High Pressure] Condenser
DB-PM-1797 E7-2; Inspect Steam Side of LP [Low Pressure] Condenser
Drawing OS-046; Chemical Addition System; Revision 25
Event Notification 42437; dated March 21, 2006.
LER 05000346/2006-002-00; Ultrasonic Examination Identifies Axial Flaw Indication in Reactor Coolant Pump Drain Line Weld; dated May 22, 2006.
NOP-ER-3001; Problem Solving and Decision Making; Revision 2
OE12145 - Reactor Scram Due to Loss of Condenser Vacuum; dated April 16, 2001
OE12601 - Erosion of Low Pressure Turbine "Slop Drains" Inside the Main Condenser; dated August 14, 2001
OE12609 - Turbine Slop Drain Leakage Discovered During Condensate Dissolved Oxygen Investigation; dated August 14, 2001
OE13108 - Condenser In-Leakage due to Slop Drain Leaks Inside Condenser; dated January 3, 2002
OE15304 - Condenser Vacuum was Observed Rapidly Decreasing Due to a Break in Turbine Bearing Slop (steam vapor and oil) Drain Line; dated January 3, 2003
OE20032 - Loss of Condenser Vacuum; dated February 18, 2005
OE20112 - Condenser Air In-Leakage via Low Pressure (LP) Turbine Bearing "Slop Drain" Lines at Oconee Nuclear Station (ONS); dated March 04, 2005
Problem Solving Plan; dated April 7, 2006.

Root Cause Analysis Report; Axial Indication in Reactor Coolant Pump 1-1 Cold Leg Drain Line Nozzle-to-Elbow Alloy 182/82 Dissimilar Metal Weld; dated May 8, 2006.
WO200117096; Working In Progress Log for High Pressure Condenser for 14RFO

4OA5 Other Activities

Calculation ME-037.01-003; Tank Level Curve - Condensate Storage Tanks; Revision 1
Calculation 015.044; Diesel Fire Pump Day Tank Fuel Oil Capacity Requirement; Revision 1
Calculation NSA-052.01-003; HPI Pump Acceptance Criteria; Revision 8, Addendum 5
Calculation ME-013.01-028; Diesel Fire Pump Cooling Calculation with Increased Forebay Temperature; Revision 1
CR 05-05695; Calculation of CST [Condensate Storage tank] Volume for Compliance With TS 3.7.1.3
NOBP-CC-2005; Engineering Assessment Board; Revision 0

LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agency-wide Document Access and Management System
AFI	Area For Improvement
ANSI	American National Standards Institute
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
CST	Condensate Storage Tank
DH	Decay heat
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
FENOC	FirstEnergy Nuclear Operating Company
gpm	gallons per minute
HPI	High Pressure Injection
IE	Initiating Events
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IST	Inservice Testing
LER	Licensee Event Report
MS	Mitigating Systems
MSPI	Mitigating Systems Performance Index
MWe	Megawatts Electric
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
OE	Operating Experience
PI	Performance Indicator
ppm	parts per million
RIS	Regulatory Information Summary
SC/SCWE	Safety Culture/Safety Conscious Work Environment
SDP	Significance Determination Process
TS	Technical Specification
USAR	Updated Safety Analysis Report
VAC	Volts Alternating Current
WPG	Work Process Guideline