



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
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July 24, 2009

Mr. Barry Allen  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Davis-Besse Nuclear Power Station  
5501 North State Route 2, Mail Stop A-DB-3080  
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION INTEGRATED INSPECTION  
REPORT 05000346/2009-003

Dear Mr. Allen:

On June 30, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Davis-Besse Nuclear Power Station. The enclosed inspection report documents the results of our inspection, which were discussed on July 14, 2009, 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. Based on the results of this inspection, no findings of significance were identified.

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

Sincerely,

**/RA/**

Jamnes L. Cameron, Chief  
Branch 6  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000346/2009-003  
w/Attachment: Supplemental Information

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Letter to B. Allen from J. Cameron dated July 24, 2009

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REPORT 05000346/2009-003

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REPORT 05000346/2009-003

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000346/2009-003

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Davis-Besse Nuclear Power Station

Location: Oak Harbor, OH

Dates: April 1, 2009, through June 30, 2009

Inspectors: J. Rutkowski, Senior Resident Inspector  
A. Wilson, Resident Inspector  
D. Jones, Reactor Engineer  
P. Voss, Reactor Engineer

Approved by: Jamnes L. Cameron, Chief  
Branch 6  
Division of Reactor Projects

Enclosure

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## SUMMARY OF FINDINGS

IR 05000346/2009-003; 4/1/09 – 6/30/09; Davis-Besse Nuclear Power Station.

This report covers a 3-month period of inspection by resident inspectors. No findings of significance were identified by the inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

**A. NRC-Identified and Self-Revealed Findings**

No findings of significance were identified.

**B. Licensee-Identified Violations**

No violations of significance were identified.

## REPORT DETAILS

### Summary of Plant Status

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

On April 5, 2009, the operators shutdown the plant and placed it in mode 5 to replace pressurizer safety valves. The operators returned the plant to power operation on April 20, 2009. For the remainder of the inspection period the plant remained at 100 percent power, except for a brief period to support routine testing and to exercise control rod drives.

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

### **1. REACTOR SAFETY**

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

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Readiness of Offsite and Alternate AC Power Systems

##### a. Inspection Scope

The inspectors verified that plant features and procedures for operation and continued availability of offsite and alternate alternating current (AC) power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator (TSO) and the plant to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- the coordination between the TSO and the plant during off-normal or emergency events;
- the explanations for the events;
- the estimates of when the offsite power system would be returned to a normal state; and
- the notifications from the TSO to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to or during adverse weather conditions. Specifically, the inspectors verified that the procedures addressed the following:

- the actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant would not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;
- the compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;

- a re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- the communications between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

Documents reviewed are listed in the Attachment to this report. The inspectors also reviewed corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures.

This inspection constituted one readiness of offsite and alternate AC power systems sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- auxiliary feedwater train 1 during a scheduled outage of train 2 on April 28, 2009;
- component cooling water train 2 while train 1 ventilation was out of service on May 5, 2009; and
- decay heat and low pressure injection train 1 after train maintenance on June 9 and 10, 2009.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Final Safety Analysis Report (UFSAR), Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. 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 CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These activities constituted three partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On May 13 through 15, 2009, the inspectors performed a complete system alignment inspection of the containment spray system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment.

These activities constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- No. 1 Electrical Penetration Room (Room 402, Fire Area DG);
- Radwaste Exhaust Equipment and Main Station Exhaust Fan Room (Room 501, Fire Area EE); and
- Emergency Diesel Generator (EDG) Rooms (Room 318/319, Fire Area K/J).

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained

passive fire protection features in good material condition, and had implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events (IPEEE) with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed, that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On May 12, 2009, during an emergency preparedness drill, the inspectors observed a fire brigade activation in response to a simulated fire alarm in the emergency diesel generator 2 room. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives. Documents reviewed are listed in the Attachment to this report.

These activities constituted one annual fire protection inspection sample as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R06 Flooding - Internal Flooding (71111.06)

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the UFSAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant areas to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- emergency core cooling rooms one, two and the decay heat cooler room.

This inspection constituted one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings of significance were identified.

1R07 Annual Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors evaluated the licensee's execution of biofouling controls for the service water (SW) system and the circulating water system. As part of this inspection, the inspectors performed a walkdown of the chemical injection systems and reviewed the operating procedures for the system. Additionally, the inspectors reviewed the licensee's testing of the SW side of the turbine plant cooling water heat exchangers to verify that potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions. Documents that were reviewed for this inspection are listed in the Attachment to this document.

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

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On May 28, 2009, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

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

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

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

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

- steam and feedwater line rupture control system; and
- emergency diesel generators.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems and

independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- orange risk drain of reactor coolant system (RCS), with no RCS loops available for cooling and no adequate vent path for 'feed and bleed,' from filled and vented to greater than or equal to 80 inches above the RCS hot leg centerline for pressurizer safety-relief valve replacement on April 7 and 8, 2009;
- orange risk performance of tap changing activities on the startup transformers on April 7 and 8, 2009;
- reactivity plan review and use during the approach to and subsequent criticality of the reactor core on April 20, 2009;
- failed testing of the main turbine control valves and consequential plant small transient on April 23, 2009, with subsequent restoration of normal alignment and decision to proceed without a successful test; and
- loss of the switchyard J Bus on June 25, 2009, due to a faulted coupling capacitor potential device which caused entry into a 72-hour limiting condition for operation and required addressing damage to other switchyard insulating devices caused by the faulted device

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

These maintenance risk assessments and emergent work control activities constituted five samples as defined in IP 71111.13-05.

b. Findings

Introduction: The inspectors determined that an unresolved item (URI) existed concerning the loss of the 345 KV switchyard J Bus. The J Bus was de-energized upon a catastrophic failure of the J Bus phase B capacitive coupled potential device (CCPD) at 12:49 a.m. on June 25, 2009. The event required the licensee to declare one offsite AC source inoperable and enter TS LCO 3.8.1(a) requiring restoration of one offsite circuit within 72 hours.

Description: During the event, a spread of fire was reported in the switchyard. The licensee's fire brigade was able to extinguish the fire within 33 minutes. As a conservative measure, the assistance of Carroll Township was requested, but was not needed to put out any fires. A temporary modification was issued to remove the CCPDs from all three phases of the J Bus until a bus outage could be scheduled to replace the potential devices. At 11:05 p.m. on June 26, the licensee safely restored the J Bus to an energized and operable condition, which was required to meet TS 3.8.1 and exit the 72-hour shutdown requirement.

At the time of the failure, the licensee evaluated the Emergency Action Levels (EALs), but did not make an emergency declaration at that time. However, upon further review the following morning, the licensee determined that the failure of the CCPD met the definition of an explosion as defined in emergency procedure RA-EP-02840, "Explosion". A reportability notification was made to the NRC at 11:44 a.m. on June 26, 2009. The NRC is continuing to inspect this aspect of the event.

The switchyard maintenance strategy template requires a critical potential device to be replaced after 25 years. After two non-catastrophic failures of CCPDs, occurring in December 2007, and January 2008, the licensee identified that these components were installed beyond the 25-year life expectancy. At that time, a walkdown of the switchyard revealed eight CCPDs that were beyond 25 years and needing replacement. Replacement was scheduled to begin in the fall of 2009 and spring of 2010. The CCPD that caused the loss of the J Bus had been installed beyond 25 years.

The cause of the catastrophic failure of the CCPD is not known at this time. Condition Report 09-61025 documented the equipment failure. A root cause evaluation was assigned to determine the cause of the failure, to identify equipment, organizational and programmatic factors involved in the failure and to develop actions to prevent

recurrence. The root cause evaluation of the event was not available for the inspectors' review before the end of the inspection period. Therefore, this issue is considered an unresolved item (URI 05000346/2009003-01) pending completion of the inspectors' review.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- CR 09-57730 and CR 09-57560 which documented software problems associated with the incore monitoring system encountered during plant startup;
- CR 09-54757 which documented the non-functionality of the low speed stop in the speed circuitry of hydraulic function of the governor for EDG 2; and
- CR 09-56190 which documented inaccuracies in the displayed nuclear power wide range and source range on the gammetrics nuclear power train 2 (instrument NI5875).

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and Updated Safety Analysis Report (USAR) to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted three samples as defined in IP 71111.15-05

b. Findings

No findings of significance were identified.

1R18 Plant Modifications Permanent Plant Modifications (71111.18)

a. Inspection Scope

The following engineering design package was reviewed and selected aspects were discussed with engineering personnel:

- ECP 09-0394, "Replace Pressure Transmitter DB-PT2374A."

This document and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design

parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors observed ongoing and completed work activities to verify that installation was consistent with the design control documents. The modification installed a current -design main turbine first-state pressure sensor and transmitter and modified power supply for the transmitter. Documents reviewed in the course of this inspection are listed in the Attachment to this document.

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

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- decay heat train 2 pump and valve test on April 3, 2009, after replacement of the pump casing vent valve and preventive maintenance on the discharge valve actuator;
- main steam isolation valve MS100 air drop test and stroke time testing on April 18, 2009, after disassembly and rebuild of the valve when determined necessary because of the inability to stroke the valve open;
- makeup pump 2 surveillance test on May 27, 2009, after lubrication preventive maintenance tasks, modifications to oil pump breaker circuits, and replacement of a cooling water valve for pump lubricating oil;
- EDG 2 monthly test on May 29, 2009, after replacement of the air start pressure regulator valve; and
- safety features actuation system output module L311 on June 3 and 4, 2009, after replacement of the module due to the installed module not releasing the block signal to decay heat pump 1 and associated components during system sequencer testing.

These activities were selected based upon the SSC's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion), and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed

corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted five post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

1R20 Outage Activities - Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors evaluated outage activities for a scheduled mid-cycle outage that began on April 5, 2009, and continued through April 21, 2009. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed or reviewed the reactor shutdown and cooldown, outage equipment configuration and risk management, electrical lineups, selected clearances, control and monitoring of decay heat removal, control of containment activities, startup and heatup activities, approach to criticality, and identification and resolution of problems associated with the outage. Additionally, the inspectors observed or reviewed all or select portions of the major work activities which included the planned replacement of the reactor coolant safety valves and emergent work involved with repair of main steam stop valve MS100.

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

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- DB-PF-3008, "Containment Local Leakage Rate Tests," on the containment purge outlet lines on April 8, 2009 (containment isolation valve);
- reactor under-vessel inspection and DB-OP-03013, "Containment Daily Inspection and Containment Closeout Inspection," on April 9, 2009 (routine);
- DB-SC-3077, "EDG 2 184 Day Test," on April 30, 2009 (routine); and

- DB-SP-3357, "RCS Water Inventory Balance," on June 20 through June 22, 2009 (RCS leak detection).

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

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency were in accordance with TSs, the USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted two routine surveillance testing samples, one RCS leak detection inspection sample, and one containment isolation valve sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings of significance were identified.

**CORNERSTONE: Emergency Preparedness**

1EP6 Drill Evaluation - Emergency Preparedness Drill Observation (71114.06)

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on April 14, 2009, to identify any weaknesses and deficiencies in classification, notification, and

protective action recommendation development activities. The inspectors observed emergency response operations in the Control Room Simulator, Technical Support Center, and Emergency Operations Facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151)

.1 Unplanned Scrams with Complications

a. Inspection Scope

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

This inspection constituted one unplanned scrams with complications sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Unplanned Transients per 7000 Critical Hours

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

40A2 Identification and Resolution of Problems (71152)

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

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

a. Inspection Scope

As part of the various baseline IPs discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the attached List of Documents Reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an

integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

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

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 40A2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six month period of October 1, 2008, through March 31, 2009, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

This review constituted a single semi-annual trend inspection sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

.4 Annual Sample: Review of Operator Workarounds

a. Inspection Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the operator workarounds (OWAs) on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of OWAs. The documents listed in the Attachment were reviewed to accomplish the objectives of the IP. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their CAP and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified OWAs.

This review constituted one OWA annual inspection sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

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

.1 Offsite Notifications Made Due to Inadvertent Actuation of Six EPZ Sirens

a. Inspection Scope

The inspectors reviewed the plant's response to the inadvertent actuation of six emergency planning zone sirens in Bay Township on April 30, 2009. The sirens were activated at the Ottawa County Dispatch Console for 3 minutes while maintenance was being performed on the radio system. The licensee notified Lucas County, Ottawa County, and the State of Ohio of the inadvertent actuation. The event was reported to the NRC under 10 CFR 50.72(b)(2)(xi) and is listed as Event Number 45032. Documents reviewed in this inspection are listed in the Attachment.

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

b. Findings

No findings of significance were identified.

.2 Licensee Actions in Response to a Low Voltage on Battery 1N

a. Inspection Scope

The inspectors reviewed the plant's response on May 12, 2009, to battery 1N's voltage at 128.87 volts DC which was below the technical specification allowable voltage of 130.2 volts DC. Licensee investigation determined that the cause of the low voltage was associated with the battery charger, DBC1N, that was providing float voltage on the battery and that the battery was capable of meeting its performance requirements. The licensee's immediate actions included adjusting the battery charger's potentiometer to provide a higher float voltage and then switching the float charge on the battery to another installed battery charger. Documents reviewed as part of this inspection are listed in the Attachment.

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

b. Findings

No findings of significance were identified.

.3 Licensee Actions in Response to Increasing Circulating Water Differential Pressure Across the Low Pressure Condenser

a. Inspection Scope

The inspectors reviewed the plant's actions addressing issues with increasing circulating water differential pressures (d/p) across the low pressure portion of the main condenser. The licensee determined that the primary cause of the increasing back pressure was an accumulation of cooling tower fill hardware in the low pressure condenser inlet waterboxes. The issue was initially addressed by cleaning of the waterboxes during a planned outage in April 2009, but increases in d/p were observed shortly after the return to power. Licensee actions to address the continuing debris issue included guidance for circulating water screen cleaning and adding screens and reducing the mesh size on the screens. The inspectors reviewed the operational decision making instrument developed by the licensee to provide guidance for elevated circulating water intake screens d/p and the recommendations from a problem-solving team that was responsible for reviewing the issues. The inspectors also reviewed the revised biocide treatment plan for the control of algae growths that complicated the licensee's plans for addressing d/p buildup on the circulating water screens.

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

b. Findings

No findings of significance were identified.

#### 4OA5 Other Activities

##### .1 Licensee Activities and Meetings

The inspectors observed select portions of licensee activities and meetings and met with licensee personnel to discuss various topics. The activities that were sampled included:

- post-outage critique on April 22, 2009, for the pressurizer safety valve outage;
- supervisory briefing on May 4, 2009, and June 29, 2009;
- first quarter Fleet Oversight Performance Report on May 8, 2009;
- Corporate Nuclear Review Board plant status presentation on May 20, 2009;
- Corporate Nuclear Review Board debriefs on May 22, 2009;
- monthly performance review meeting on June 19, 2009;
- Corrective Action Review Board meeting on May 4, 2009; and
- Davis-Besse site all hands meeting on April 17, 2009, and June 15, 2009.

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

On July 14, 2009, the inspectors presented the inspection results to Mr. B. Allen and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee

- B. Allen, Site Vice President
- B. Boles, Director, Site Maintenance
- S. Cope, Senior Nuclear Specialist, Emergency Planning
- V. Kaminskis, Director, Site Operations
- D. Moul, Director, Site Engineering
- C. Price, Director, Site Performance Improvement
- C. Stenbergen, Superintendent Operations Training
- S. Trickett, Superintendent, Radiation Protection
- J. Vetter, Emergency Response Manager
- G. Wolf, Regulatory Compliance Supervisor
- D. Wuokko, Manager, Regulatory Compliance

**LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

Opened

05000346/2009003-01	URI	Loss of Switchyard J Bus
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## LIST OF DOCUMENTS REVIEWED

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

### 1R01 Adverse Weather Protection

#### Procedures:

- DB-OP-1300; Switchyard Management; Revision 6
- DB-OP-2025; Davis-Besse 345 KV Switchyard Alarm Panel 25 Annunciators; Revision 6
- DB-OP-2521; Loss of AC Bus Power Sources; Revision 13
- DB-OP-2546; Degraded Grid; Revision 0
- FE-EOP-113W; Nuclear Plant Operation During a System Emergency; Revision 2
- FE-NOP-31; Davis-Besse Voltage Alarm Procedure; Revision 4
- NOP-OP-1003; Grid Reliability Protocol; Revision 2

#### Other:

- American Transmission System Revised and Restated Generator Interconnection and Operating Agreement with Midwest Independent Transmission System Operator and FirstEnergy Nuclear Operating Company

### 1R04 Equipment Alignment

#### Condition Reports:

- CR 07-19601; BACC: Surface rust on bolts. Containment spray pump 1
- CR 08-41788; BACC: Slight boric acid accumulation in cmtt spray pump #2 suction line flange
- CR 08-41831; BACC: Boric acid accumulation on containment spray pump #2 suction flange
- CR 08-47998; BACC: Boric acid accumulation on inboard pump shaft of containment spray pump 2
- CR 09-59387; BACC—Packing found on CS 1530 by NRC inspector

#### Procedures:

- DB-OP-6012; Decay Heat and Low Pressure Injection System Procedure; Revision 41
- DB-OP-6013; Containment Spray System; Revision 20
- DB-OP-6233; Auxiliary Feedwater System Operating Procedure; Revision 26
- DB-OP-6262; Component Cooling Water System Procedure; Revision 18
- DB-SP-3337; Containment Spray train 1 Quarterly pump and valve test; Revision 19
- DB-SP-3338; Containment Spray train 2 Quarterly pump and valve test; Revision 19

#### Drawings:

- OS-4, Sheet 1; Decay Heat Removal/Low Pressure Injection System; Revision 45
- OS-5; Containment Spray System; Revision 11
- OS-17A, Sheet 1; Auxiliary Feedwater System; Revision 22
- OS-17B, Sheet 1; Auxiliary Feedwater Pumps and Turbines; Revision 24
- OS 21, Sheet 1; Component Cooling Water System; Revision 33
- OS 21, Sheet 2; Component Cooling Water System; Revision 25
- M-034; Emergency Core Cooling System, Cmtt. Spray, & Core Flooding Systems; Revision 65

Work Orders:

- WO 200011662; CS pump #2 suction spool
- WO 200370524; CS1530—Retorque packing, MOV
- Notification 600381540; Bolts are rusting on Ctmt spray pump 1; 4/29/07
- Notification 600471556; Ctmt spray suction line flange leak; 6/13/08
- Notification 600471731; Ctmt spray suction line flange leak; 6/15/08
- Notification 600477318; BACC—Followup inspection of P56-2; 7/9/08
- Notification 600499173; Boric acid on Ctmt spray pump shaft; 10/16/08
- Notification 600543241 BACC Leak—Retorque packing of CS 1530; 5/18/09

Other:

- ISTB1, Valve Basis—Containment Spray System; Revision 07
- SD-22A; System Description for Containment Spray; Revision 03

1R05 Fire Protection

Procedures:

- DB-FP-5; Fire Brigade; Revision 5
- DB-OP-2529; Abnormal Procedure—Fire Procedure; Revision 5
- NG-DB-302; DBNPS Fire Protection Program; Revision 6
- NT-OT-7007; Fire Brigade Training; Revision 7
- PFP-AB-318;; Diesel Generator 1-1 Room, Rooms 318 and 318UL, Fire Area K; Revision 6
- PFP-AB-319; Diesel Generator 1-2 Room, Rooms 319 and 319A, Fire Area J; Revision 6
- PFP-AB-402; No. 1 Electrical Penetration Room, Room 402, Fire Area DG; Revision 4

Drawings:

- A-0223F; Fire Protection General Floor Plan, Elev. 585'-0"; Revision 20
- A-0224F; Fire Protection General Floor Plan, Elev. 603'-0"; Revision 22
- A-0225F; Fire Protection General Floor Plan, Elev. 623'-0"; Revision 16

Other:

- Fire Brigade Drill Evaluation; Second Quarter 2009 Day shift; 5/12/09
- EP Evaluated Exercise Debrief Report; 5/12/09
- Fire Hazard Analysis Report

1R06 Flooding

Condition Reports:

- CR 05-3342; IN 2005-11 Internal Flooding/Spray-Down of SR Equipment
- CR 07-24837; Decay Heat Exchanger Pit (Room 113) Floor Drain Approximately ¼ Blocked

Procedures:

- RA-EP-2880; Internal Flooding; Revision 3

Drawings:

- C-1594; Barrier Functional List; Revision 3
- M-174; Auxiliary Building Plan EI 545' & Partial Plans; Revision 19
- M-175; Auxiliary Building Details, Notes and Symbols; Revision 9

Work Orders:

- 200188136; PM 5773 P89-2A Clean ECCS Room Sump
- 200221300; PM 5774 P89-3A Clean ECCS Sump 3 Pump A
- 20022165; IN 05-11, Internal Flooding and Spray Down of Components

Calculations:

- 15.50; Fire Suppression System Impact on Auxiliary Building Flooding; Revision 1
- 58.10; Flow Rate Due to a Crack in Make-Up Pump Discharge; Revision 3
- 58.20; Flooding in ECCS Rooms due to a Feedwater Line Break; Revision 1
- 58.20, Addendum A01; Flooding in ECCS Rooms due to a Feedwater Line Break; Revision 1

Other:

- Notification 600262473; Identify Credited Floor Drains in Auxiliary Building
- Notification 600405113; Clean Floor Drains in Room 113
- Notification 600428715; Clean Floor Drains
- USAR Sections 3.2.6.7.2 (Seismic Class II Fluid Systems) and 9.3.3 (Equipment and Floor Drainage Systems)

1R07 Annual Heat Sink Performance

Condition Reports:

- CR 09-59363; Eddy Current Results on #3 TPCW Heat Exchanger

Procedures:

- DB-CH-6013; Station Chlorination System; Revision 27
- DB-CH-6075; Dechlorination Skid Operations; Revision 1

Work Orders:

- 200291418; PM 6529, TPCW Eddy Current Test

1R11 Licensed Operator Regualification Program

Other:

- DB-S102, OTLC 2009-03; CAC Malfunction, API Failure, and Makeup System Leak; Revision 0

1R12 Maintenance Effectiveness

Condition Reports:

- CR 06-630; Integrated SFRCS Testing: AF 3869 Did Not Close On Manual SFRCS Signal
- CR 06-2284; 10CFR21 Notification for Prime/Barton DP Instruments
- CR 09-52409; SFRCS Testing Log Entries Not Correct
- CR 09-59278; SFRCS Maintenance Rule Unavailability Accuracy
- CR 09-56511; DH11 and DH12 Open in Mode 3 Inhibits SFRCS From Opening MS 106 and MS 107
- CR 09-59999; Potential Safety Concern While Drawing Oil Samples From EDG Generator Bearings

Procedures:

- DB-CH-04056; New Diesel Fuel Oil Analysis; Revision 3
- DB-MI-3211; Channel Functional Test of SFRCS Actuation Channel 1 Logic for Mode 1; Revision 15
- DB-MI-3245; Channel Functional Test and Device Calibration of SFRCS Steam Generator Level Inputs 83C-ISLSP9A6, A7, B8 and B9 to Actuation Channel 1; Revision 9
- DB-MM-09159; EDG and SBODG Starting Air Compressor Maintenance; Revision 2
- DB-OP-06904; Shutdown Operations; Revision 29
- DB-PF-3; Maintenance Rule; Revision 8
- DB-SC-3073; Emergency Diesel Generator 2 Maintenance Surveillance; Revision 3
- IP-A-008; Emergency Diesel Generator Room Temperature Monitoring; Revision 0
- NOP-ER-3004; FENOC Maintenance Rule Program; Revision 1
- NOP-LP-2001; Corrective Action Program; Revision 21
- NOP-OP-1007; Risk Determination; Revision 5

Work Orders:

- Notification 600344870; Inspect Bellows for Damage
- Notification 600326832; Replace due to Excessive Number of Calibrations
- WO 200283215; Replace Relays SFRCS Train 1
- WO 200324708; PM 8151 Replace Switch

Drawings:

- OS-41A; Emergency Diesel Generator Systems; Revision 20
- OS-41B; Emergency Diesel Generator Air Start / Engine Air System; Revision 26
- OS-41C; Emergency Diesel Generator Diesel Oil System; Revision 14

Other:

- Maintenance Rule Unavailability Database
- Maintenance Rule Program Manual; Revision 26
- M-180Q; Technical Specification for Operational Phase for Emergency Diesel Generators for Davis Besse Nuclear Power Station; Revision 1
- Plant Health Report; Fourth Quarter 2008
- SD-3B; System Description for Emergency Diesel Generators and Station Blackout Diesel Generator; Revision 5
- SD-10; Steam and Feedwater Line Rupture Control System Description; Revision 5
- USAR Section 7.4.1.3; Steam and Feedwater Line Rupture Control System (SFRCS)
- USAR Section 8.3.1.1.4.1; Emergency Diesel Generators

1R13 Maintenance Risk Assessments and Emergent Work Control

Condition Reports:

- CR 07-31982; Failure of Lemoyne Line CCPD Caused Entry Into Tech Spec 3.8.1.1 Action A
- CR 08-34376; Bayshore Line CCPD Failure Trending Only Condition Report
- CR 08-32881; ER Template Incorrectly Implemented
- CR 09-56734; Rod 5-8 Position indication is erratic and causing asymmetric alarm
- CR 09-56724; Indication for PORV open status did not respond as expected
- CR 09-56725; Steam generator fill/soak/drains terminated prior to meeting chemistry specs
- CR 09-56688; CRD Group 4 rods did not transfer to AUX
- CR 09-57462; Rod B-6 (Safety Group 4) jumping 0-20%
- CR 09-57475; Steam Leak at MS762
- CR 09-57501; Reactor startup stopped due to anticipated critical rod index less than limit

- CR 09-57699; Plant Transient During Control Valve Testing, DB-SS-4151
- CR 09-61025; Loss of J Bus, Catastrophic Failure of J Bus B Phase Potential Device
- CR 09-61115; Transitory Alert Emergency Classification Following Loss of J Bus
- CR 09-61038; DB Security to Critique Opportunities for Improvement On Response to Switchyard Event
- CR 09-61112; RA-EP-01500 Procedure Requires Additional Guidance

Procedures:

- DB-ME-5501; Start-Up Transformer X01 Tap Changes; Revision 2
- DB-ME-5502; Start-Up Transformer X02 Tap Changes; Revision 2
- DB-OP-6002; RCS Draining and Nitrogen Blanketing; Revision 16
- DB-OP-6900; Plant Heatup; Revision 43
- DB-OP-6901; Plant Startup; Revision 31
- DB-OP-6904; Shutdown Operations; Revision 29
- DB-OP-6912; Approach to Criticality; Revision 11
- DB-SS-4151; Main Turbine Control Valve Test; Revision 8
- NG-DB-00117; Shutdown Defense in Depth Assessment; Revision 02
- NOP-OP-1006; Shutdown Defense in Depth; Revision 10
- NOP-OP-1007; Risk Determination; Revision 05

Other:

- Drawing OS 56, Sheet 1; 345 KV System; Revision 7
- Event Notification 45162; Davis-Besse: Discovery of an After-the-Fact Alert Due to Catastrophic Failure of CCPD
- FirstEnergy Switching Order – Davis-Besse 345 KV J-Bus; June 25, 2009; Revision 3
- Operations Evolution Order; Recovery from Turbine Control Valve Testing; April 23, 2009
- Unit Logs; Night Shift; June 25, 2009
- Weekly Maintenance Risk Summary; Week of June 22, 2009; Revision 1 and 2

1R15 Operability Evaluations

Condition Reports:

- CR 09-52766; Nuclear Fuel: Reactor Core Axial Power Imbalance Predicted Versus Measured
- CR 09-57560; Failure of NSSDATA Program
- CR 09-57730; Incores Non-Functional Due to NAS Issues

Procedures:

- DB-MI-5255; Nuclear Instrument NI 08 (RPS CH 3) Power Range Adjustment; Revision 9
- DB-MM-9118; EDG Governor Removal, Installation, and Adjustment; Revision 8
- DB-NE-3230; RPS Daily Heat Balance Check; Revision 14
- DB-NE-3231; RPS Monthly Imbalance Check; Revision 3
- DB-NE-3233; Incore Instrument Channel Check; Revision 3
- DB-NE-4220; Imbalance, Tilt, and Rod Index Calcs – Group 38 Alarms; Revision 0
- DB-OP-2044; Emergency Diesel Generator 2 Alarm Panel 44 Annunciators; Revision 6
- DB-OP-6316; Diesel Generator Operating Procedure; Revision 41
- DB-SC-3081; Emergency Diesel Generator 2 Overspeed Trip Test; Revision 5

Work Orders:

- 200343124; Incore Instrumentation Channel Check
- 200354500; Imbalance, Tilt, and Rod Index Calculation
- 200367012; Imbalance, Tilt, and Rod Index Calculation
- 200367069; Imbalance, Tilt, and Rod Index Calculation
- 200367070; Imbalance, Tilt, and Rod Index Calculation

Drawings:

- M-180Q-14; Schematic Diagram Engine Control; Revision N

Other:

- Cycle 16 Outage Log; April 21, 2009
- Operator Logs; April 21, 2009
- Operator Logs; April 22, 2009
- Operator Logs; April 23, 2009
- Operator Required Reading; Control of #2 Emergency Diesel Generator If In the Hydraulic Mode for the Governor; March 9, 2009
- System Description 3B; Emergency Diesel Generators; Revision 5

1R18 Plant Modifications

Condition Reports:

- CR 09-57699; Plant Transient During Control Valve Testing, DB-SS-4151
- CR 09-59382; First Stage Pressure Feedback Signal Reversed at EHC Cabinet After Implementing ECP

Procedures:

- DB-SS-4151; Main Turbine Control Valve Test; Revision 9

Work Orders:

- 2003367857; Transmitter Will Not Calibrate

Drawings:

- M-3B, Sheet 2; Main Steam and Reheat System; Revision 23

Other:

- Computer Group Trend; Core and Generated Power with High Pressure Steam Chest Pressure; June 6, 2009
- ECP 09-0394-000; Pressure Transmitter PT2374A; Revision 0
- ECP 09-0394-001; Replace Pressure Transmitter PT2374A; Revision 0
- M-7201; Instrument Index; Revision 50
- NEI 96-07; Guidelines for 10 CFR 50.59 Implementation; Revision 1

1R19 Post-Maintenance Testing

Condition Reports:

- CR 08-40248; DH1A Removed From #2 DH Loop Outage at T+01 Work Week
- CR 09-56424; Lower Bearing on Drive Sleeve Assembly Found Damaged
- CR 09-56980; MS100 Failed to Open
- CR 09-57272; MS100 Main Steam Line 2 Isolation Valve Failed to Fully Open
- CR 09-57234; As Found Condition – MS100

- CR 09-59954; SFAS Output Module L311 Did Not Indicate Proper Block/Releasing During Testing
- CR 09-59839; EDG 2 DA31 Side Air Motor Abutment During Idle Start
- CR 09-59860; PI2994 Slow to Respond Following Restoration of #2 EDG 2-2 Air Start Side
- CR 09-60065; Order to Troubleshoot and Repair SFAS L311 Did Not Include LCO 3.0.5 Details (NRC Identified)

Drawings:

- OS 2, Sheet 1; Makeup and Purification System; Revision 28
- OS 2, Sheet 3; Makeup and Purification System; Revision 30
- OS 2, Sheet 4; Makeup and Purification System; Revision 20

Procedures:

- DB-MI-3135; Response Time Test of 64B-ISPRC02B4 Reactor Coolant Loop 1 Hot Leg Wide Range Pressure SFAS Channel 1; Revision 9
- DB-OP-6006; Makeup and Purification System; Revision 24
- DB-PF-03272; Post Maintenance Valve Test; Revision 6
- DB-SC-3071; Emergency Diesel Generator 2 Monthly Test; Revision 20
- DB-SC-3110; SFAS Channel 1 Functional Test; Revision 18
- DB-SP-3137; Decay Heat Train 2 Pump and Valve Test; Revision 21
- DB-SP-3376; Quarterly Makeup Pump 2 Inservice Test and Inspection; Revision 11
- DB-SP-3444; SFRCS Channel 1 Trip of MS100 and MS101; Revision 8
- DB-SP-3445; SFRCS Channel 2 Trip of MS100 and MS101; Revision 9
- DB-SS-4005; Main Steam Isolation Valve Air Leak Test; Revision 3

Work Orders:

- 200007526; ECP 02-197-00 – Replace Valve CC130
- 200238472; DH56 - Replace Valve
- 200282723; DH1A Actuator Relube
- 200265448; Replace EDG Air Receiver 1-2-1 Pressure Regulator Valve
- 200364040; DH00001A Post Maintenance Test
- 200359612; Calibrate MU Pump 2 Lube Oil Pressure Switches
- 200365506; FV100 Rebuild Actuator/MS100 Rebuild
- 200372040; SFAS Channel 1 Output Module L311 Inoperable

Other:

- ECR 05-0299-00; D117, D217 Wiring Changes; Revision 0
- EDB-SUB049-02-006; Clearance – LP Injection 2 Valve Motor
- EWR 02-197-00; Replace Valve CC130 With an Equivalent Valve; Revision 1
- Operation Evolution Order; Drain DH Pump 2 to Replace DH56

1R20 Outage Activities

Condition Reports:

- 09-57462; Rod B-6 Relative Position Indication Not Working Correctly
- 09-57501; Reactor Startup Stopped Due to Anticipated Critical Rod Index Less Than Limit

Procedures:

- DB-OP-1101; Containment Entry; Revision 8
- DB-OP-6301; Generator and Exciter Operating Procedure; Revision 21
- DB-OP-6900; Plant Heatup; Revision 42

- DB-OP-6901; Plant Startup; Revision 31
- DB-OP-6902; Power Operations; Revision 25
- DB-OP-6903; Plant Cooldown; Revision 32
- DB-OP-6904; Shutdown Operations; Revision 29
- DB-OP-6912; Approach to Criticality; Revision 11
- DBBP-ESAF-1015; Industrial Safety Requirements for Containment Entry; Revision 14
- NG-DB-117; Shutdown Defense In Depth Assessment; Revision 2
- NOP-OP-1005; Shutdown Defense in Depth; Revision 10
- NOP-OP-1007; Risk Determination; Revision 5

Other:

- Plant Manager Memorandum; Enumeration of "Infrequently Performed Tests or Evolutions;" March 23, 2009
- Shutdown Defense in Depth Report; April 2, 2009 and Revision 1 dated April 13, 2009
- Outage Control Center Shift Turnover Reports; April 4, 2009 through April 21, 2009
- Operations Evolution Order; Use of DB-OP-6900 Series Procedures for Pressurizer Code Safety Outage; April 3, 2009
- Cycle 16 Code Safety Outage Containment Entry Plan; Not Dated
- Reactivity Plan Review Package; Power Increase After Outage; April 9, 2009

Other:

- Contingency Plan 4/9-1; RCS Drain to 250 Inches Pressurizer Level Without an Adequate RCS Vent Path; Revision 0

1R22 Surveillance Testing

Condition Reports:

- CR 09-56991; Debris in containment (NRC Identified)
- CR 09-56964; Ctmt closeout inspection
- CR 09-56967; OP 3013 Containment close out deficiencies
- CR 09-57167; Broken glass under 1-2 RCP
- CR 09-57203; DB-OP-03013 Daily ctmt inspection results
- CR 09-57208; Concern Noted by NRC during ctmt walkdown
- CR 09-57300; DB-PA-09-02 Post-closeout ctmt debris

Procedures:

- DBBP-DBTS-2; Use of Leak Rate Monitor Test Equipment; Revision 0
- DB-OP-3013; Containment Inspection and Containment Closeout Inspection; Revision 5
- DB-PF-3008; Containment Local Leakage Rate Tests; Revision 12
- DB-PF-6703; Miscellaneous Operation Curves; Revision 14
- DB-SC-3077; Emergency Diesel Generator 2 184 Day Test; Revision 17
- DB-SP-3357; RCS Water Inventory Balance; Revision 14

Work Orders:

- 200360382; Perform PF3008-142 05.500 CV5007

Other:

- Operations Standing Order 09-3; Guidance for Evaluating PZR Quench Tank In-Leakage Values; Revision 0
- Containment Leakage Rate Testing Program; Revision 6

## 1EP6 Drill Evaluation

### Condition Reports:

- CR 09-57200; EP Drill—Issuance of emergency dosimetry for dry run
- CR 09-57267; EP Drill—No depth of experience for rad protection players in medical response
- CR 09-57299; EP Drill—Site Condition Board not understood or updated
- CR 09-57301; EP Drill—Dry run exercise: Discrepancies in EAL Reference Manual
- CR 09-57302; EP Drill—Simulated Injured Individual did not exit protected area as required
- CR 09-57305; EP Drill—Ambulance arrival on site not communicated effectively
- CR 09-57311; EP Drill—Delayed station alarm for Site Area Emergency
- CR 09-57312; EP Drill—Evaluate use of SSN when issuing dosimetry
- CR 09-57315; EP Drill—PA Accountability Request performed without Emergency Director input
- CR 09-57318; EP Drill—Posting background radiological data with no release in progress

### Other:

- Davis-Besse Emergency Preparedness Integrated Drill Manual; April 14, 2009
- NEI 99-02; Regulatory Assessment Performance Indicator Guideline; Revision 5
- Davis-Besse EP Integrated Drill CTRM Simulator Safety Brief; April 14, 2009
- March 19, 2009 Integrated Drill Lessons Learned; April 9, 2009

## 4OA1 Performance Indicator Verification

### Other:

- Select Operator Logs covering the period of April 2008 through March 2009
- NEI 99-02; Regulatory Assessment Performance Indicator Guideline; Revision 5
- Form NOBP-LP-4012-44; Initiating Events Cornerstone Indicators; Forms for April 2008 through March 2009

## 4OA2 Identification and Resolution of Problems

### Condition Reports:

- CR 09-50977; Cross-Cutting Aspects Precursor Documentation (H.2.C) Trend
- CR 09-52334; DB-SA-09-015, Negative/Emerging Trend for Plant Equipment & Reliability Engineering
- CR 09-52403; DB-SA-09-021, Site Protection IPA Negative/Emerging Trend in Human Performance
- CR 09-52478; DB-SA-09-007, Chemistry IPA – Negative Trend in Briefing or Communication LTA
- CR 09-52485; DB-SA-09-007: Chemistry IPA – Negative Trend – Procedure Non-Compliance Category
- CR 09-52734; CA-SA-09-018 Opportunities From Emerging or Potential Trends
- CR 09-53068; DB-PA-09-01 Trending of Field Observation Data Needs Improvement
- CR 09-54569; CR 08-46981 – AFP Time Delay Unacceptable PM Calibration Trend
- CR 09-56697; AS1934 Failed to Close From Control Room

### Procedures:

- NOBP-OP-12; Operator Work-Arounds, Burdens, and Control Room Deficiencies
- NOBP-LP-2010; Crest Trending Codes; Revision 8
- NOP-LP-2001; Corrective Action Program; Revision 21

Other:

- Spreadsheet of Condition Reports; From Period of Approximately September 1, 2009 through May 1, 2009
- Crest Generated List of Recurrent Trending Codes; September 1, 2009 to May 1, 2009
- Davis-Besse Fleet Oversight Quarterly Report; Fourth Quarter 2008
- Davis-Besse Fleet Oversight Quarterly Report; First Quarter 2009
- DB-SA-09-025; Site Roll-up Integrated Performance Assessment; July 1 to December 31, 2008
- DB-SA-09-030; Davis-Besse First Quarter Safety Culture Monitoring Assessment; March 31, 2009
- DB-SA-032; Minor Deficiency Monitoring Semi-Annual Review; March 2009
- ECP 08-0322-01; Temporary Power Supply to Reactor Sample Panel Fume Hood Blower Motor
- ECP 09-0114-01; Remove Breaker BE2146 Due to Water Intrusion to Allow Restoration of MCC E21A
- ECP 09-0149-001; Restores Electrical Power and Control Power to CT915 (Circ Water Loop 2 Bypass Valve)
- ECP 09-0387-01; Pinhole Leak Near CD72
- Performance Indicator D-RPO-15; Control Room Deficiencies; April 2009
- Performance Indicator D-RPO-16; Operator Workarounds; April 2009
- Performance Indicator D-RPO-17; Operator Burdens; April 2009
- Operator Work-Around/Burden – Identification Forms Database; May 22, 2009
- Operations Loss of Function List; As of May 21, 2009

40A3 Follow-Up of Events and Notices of Enforcement Discretion

Condition Reports:

- CR 09-56828; Debris Removed From LP Condenser Waterbox May Not Correlate to High DP
- CR 09-58059; PF-04717 Circ Water System Result for Condenser – LP2 Exceeds DP Criteria
- CR 09-58333; Inadvertent Activation of Bay Township EPZ Sirens by County Radio Service Vendor
- CR 09-58714; RA-EP-420 Does Not Contain Guidance for Reporting Siren Inadvertent Activation
- CR 09-59080; Battery !N Found Below Technical Specification Limit
- CR 09-59296; Adverse Circ Water DP Trend on LP Condenser Outer Loop
- CR 09-59669; ODMI: Main Condenser Fouling (LP Condenser Outer Loop)

Procedures:

- DB-ME-3000; Station Battery and Charger Weekly Surveillance; Revision 19
- DBRM-RC-0001; Regulatory Reporting Requirements; Revision 3

Other:

- Reactor Plant Event Notification Worksheet; April 30, 2009
- NRC Event Notification Report 45032; Offsite Notifications Made Due To Inadvertent Actuation of Six EPZ Sirens
- Problem Solving Plan, Main Condenser Water Box Differential Pressure; June 19, 2009
- Operational Decision Making Instrument, Main Condenser Water Box Fouling ; May 27, 2009
- Circulating Water System Enhanced Biocide Pan-Main Condenser Water Box Differential Pressure; June 2009

4OA5 Other Activities

Other:

- DB-PA-09-01; Fleet Oversight Quarterly Report, First Quarter – 2009

## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
CAP	Corrective Action Program
CCPD	Capacitive Coupled Potential Device
CFR	Code of Federal Regulations
d/p	Differential Pressure
EDG	Emergency Diesel Generator
FENOC	FirstEnergy Nuclear Operating Company
IP	Inspection Procedure
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OWA	Operator Workaround
PARS	Publicly Available Records
PI	Performance Indicator
RCS	Reactor Coolant System
SSC	Structures, Systems, and Components
SW	Service Water
TS	Technical Specification
TSO	Transmission System Operator
URI	Unresolved Item
USAR	Updated Safety Analysis Report
WO	Work Order