April 30, 2005

EA-03-214

Mr. Mark B. Bezilla
Vice President-Nuclear, Davis-Besse
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 AND SPECIAL INSPECTION REPORT 05000346/2005005

Dear Mr. Bezilla:

On March 31, 2005, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Davis-Besse Nuclear Power Station. The enclosed inspection report documents the inspection findings which were discussed on April 6, 2005, with Mr. B. Allen and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

For the entire inspection period, the Davis-Besse Nuclear Power Station was under the Inspection Manual Chapter (IMC) 0350 Process. The Davis-Besse Oversight Panel assessed inspection findings and other performance data to determine the required level and focus of followup inspection activities and any other appropriate regulatory actions. Even though the Reactor Oversight Process had been suspended at the Davis-Besse Nuclear Power Station, it was used as guidance for inspection activities and to assess findings.

Based on the results of this inspection, there were two self-revealed findings of very low safety significance which involved violations of NRC requirements. However, because these violations were of very low safety significance and because they were entered into your corrective action program, the NRC is treating the issues as Non-Cited Violations consistent with Section VI.A of the NRC Enforcement Policy.

If you contest the severity of a Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with 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 DC 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). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Steven A. Reynolds, Chairman
Davis-Besse Oversight Panel

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

Enclosure: Inspection Report 05000346/2005005
w/Attachment: Supplemental Information

cc w/encl: The Honorable Dennis Kucinich
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J. Hagan, Senior Vice President
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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-346
License No:	NPF-3
Report No:	05000346/2005005
Licensee:	FirstEnergy Nuclear Operating Company (FENOC)
Facility:	Davis-Besse Nuclear Power Station
Location:	5501 North State Route 2 Oak Harbor, OH 43449-9760
Dates:	February 20 through March 31, 2005
Inspectors:	S. Thomas, Senior Resident Inspector J. Rutkowski, Resident Inspector M. Salter-Williams, Resident Inspector J. Jacobson, Senior Reactor Engineer
Approved by:	C. Lipa, Chief Branch 4 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000346/2005005; 2/20/2005 - 3/31/2005; Davis-Besse Nuclear Power Station; Personnel Performance During Nonroutine Evolutions and Events and Operability Evaluations.

This report covers a 6-week period of resident inspection. The inspection was conducted by a Region III inspector and the resident inspectors. Two Green findings were identified, both of which involved a violation of NRC requirements. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

Green. A finding of very low safety significance was self-revealed when the control room operators did not demonstrate conservative actions when they failed to fully anticipate the plant response to a large boric acid addition to the reactor coolant system, which was conducted as part of the planned de-boration of number 2 mixed bed demineralizer. The resulting transient caused the controlling control rod group to move to its full out position and required operator to take manual action to decrease the Unit Load Demand until all of the demineralized water was added, which allowed the control rod index to return to normal position, and power was reduced approximately 1.5 percent as a result of this action. The primary cause of this finding was related to the cross-cutting area of Human Performance because the control room operators failed to operate the plant in a controlled manner, as required by plant procedures.

The inspectors determined that the finding was more than minor because it directly involved the human performance attribute of the Initiating Events cornerstone's objective which is to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was of very low safety significance because 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 if called upon. This issue was a Non-Cited Violation of Technical Specification 6.8.1, which required, in part, to establish and implement procedures that provide guidance on authorities and responsibilities for safe operation and shutdown of the reactor plant. (Section 1R14)

Cornerstone: Mitigating Systems

Green. A finding of very low safety significance was self-revealed when licensee personnel, during review of the configurations of decay heat piping, determined that recent system restoration from the decay heat pump 2 seal refurbishment was not adequate to prevent the formation of an air void in the decay heat line from the reactor coolant system to the decay heat pump 2. An air void in the line could impede

operator's efforts to establish decay heat cooling and, if required, post loss of coolant accident boron precipitation control using the decay heat system. The primary cause of the finding was related to the cross cutting area of Human Performance because the preparers and reviewers of the system clearance for the pump seal refurbishment failed to identify that the vent path specified in the system restoration was not the high point of the piping that had been drained and that another vent path could be made available that would have precluded an air void formation in the piping during system refill.

The inspectors determined that the finding was more than minor because it directly involved the human performance attribute of the Mitigating System cornerstone's objective which is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because the finding did not result in any actual loss of safety function and did not screen as significant using the criteria as outlined in the mitigating system section of the Phase 1 significant determination worksheet. This issue was a Non-Cited Violation of Technical Specification 6.8.1, which required, in part, the development and implementation of procedures that provide guidance on equipment control and instructions for filling and venting the decay heat cooling system. (Section 1R15)

B. Licensee Identified Findings

None

REPORT DETAILS

Summary of Plant Status

At the beginning of the inspection period, the plant was operating at approximately 100 percent power. During this inspection period, a brief planned power reduction of less than 10 percent occurred on March 13, 2005, to support planned turbine control valve testing. Once the testing was completed, reactor power was restored to approximately 100 percent. The plant operated at approximately 100 percent power for the remainder of the inspection period.

For the entire inspection period, the Davis-Besse Nuclear Power Station was under the IMC 0350 Process.

1. REACTOR SAFETY

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

1R04 Equipment Alignment

.1 Partial System Walkdown of the Auxiliary Feedwater System (71111.04Q)

a. Inspection Scope

On March 9, 2005, the inspectors determined whether the equipment alignment for the Auxiliary Feedwater System Train 1 was appropriate during planned maintenance activities for the auxiliary feedwater pump 2. The inspectors evaluated the system for any discrepancies that would impact the function of the system's components or cause an increase in plant risk. The inspectors also determined whether the licensee had properly identified and resolved any equipment alignment problems that could cause initiating events or impact the availability and functional capability of the system. Specific aspects of this inspection included reviewing plant procedures, drawings, and the Updated Safety Analysis Report to determine the appropriate system lineup; and evaluate any outstanding maintenance work requests on the system or any deficiencies that would affect the ability of the system to perform its function. A majority of the inspectors' time was spent performing a walkdown inspection of the system. During the walkdown, the inspectors also observed the material condition of the equipment to determine whether there were any significant conditions not already in the licensee's work control system. Key aspects of the walkdown inspection included determining whether:

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

This constitutes one sample.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown of the Component Cooling Water (CCW) System (71111.04S)

The inspectors checked equipment alignment to identify any discrepancies that would impact the function of system components within the CCW System. The inspectors also determined whether the licensee had properly identified and resolved any equipment alignment problems that would cause initiating events or impact the availability and functional capability of the mitigating system. Documentation reviewed as part of this inspection included plant procedures, drawings, and the Updated Safety Analysis Report, to determine the correct system lineup. Additionally, the inspectors evaluated outstanding maintenance work requests and condition reports to identify any deficiencies that could affect the ability of the system to perform its design basis function. A majority of the inspectors' time was spent performing a walkdown inspection of the system. Key aspects of the walkdown inspection included determining whether:

- valves were correctly positioned and did not exhibit leakage that would impact their functionality;
- electrical power was available as required;
- major system components were correctly labeled, lubricated, cooled, and ventilated;
- hangers and supports were correctly installed and functional with emphasis on the fabricated seismic and thermal restraints on the CCW pump discharge piping;
- ancillary equipment or debris did not interfere with system performance; and
- valves were locked as required by the licensee's locked valve program.

This constitutes one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Area Inspections (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection inspections focused on the availability, accessibility, and condition of fire fighting equipment, the control of transient combustibles, and the condition and status of installed fire barriers. The inspectors selected fire areas for inspection based on their overall contribution to internal fire risk, as documented in the Individual Plant Examination of External Events, and their

potential to impact equipment which could initiate a plant transient. Inspectors checked that fire hoses and extinguishers were in their designated locations and available for immediate use, that fire detectors and sprinklers were unobstructed, that transient material loading was within the analyzed limits, and that fire doors, dampers, and penetration seals appeared to be in satisfactory condition.

The following areas were inspected:

- Fire Zone EE, Room 500 (radwaste and fuel handling and air supply equipment area), on March 4, 2005;
- Fire Zone T, Room 328 (component cooling water heat exchanger and pump room), on March 8 and 14, 2005;
- Fire Zone E, Room 237 (auxiliary feedwater pump 1 room), on March 9, 2005;
- Fire Zone AB, Room 113 (decay heat cooler room), on March 14, 2005; and
- Fire Zone II, Room 516 (non-rad supply air and exhaust equipment room), on March 21, 2005.

This constitutes five samples.

b. Findings

No findings of significance were identified.

.2 Fire Brigade Drill (71111.05A)

a. Inspection Scope

The inspectors observed a fire brigade drill, which was conducted in the Turbine Building 585' elevation near the #1 Station Air Compressor, to evaluate the readiness of the licensee's personnel to prevent and fight fires. The inspectors determined whether the protective clothing/turnout gear was properly donned; that the fire area was entered in a controlled manner; that the fire hose lines were capable of reaching the fire hazard locations and that the lines were laid out without flow constrictions; that sufficient fire fighting equipment was brought to the scene by the fire brigade to properly perform their firefighting duties; and that the fire brigade leader's fire fighting directions were thorough, clear and effective.

This constitutes one sample.

b. Findings

No findings of significance were identified.

1R06 Flood Protection (71111.06)

a. Inspection Scope

The inspectors evaluated the service water pump room for internal flooding hazards. As part of this inspection, the inspectors evaluated the impact of the room's below grade wall penetrations, fire suppression capability, drain and sump locations, and sump pump capability and that these vulnerabilities were accurately depicted in design basis documents and risk assessments. Additionally, the inspectors determined whether the licensee had procedures in place to address flooding and if compensatory measures were established during maintenance activities which could increase the potential for internal flooding. The inspectors walked down the intake service structure and the service water pump room to determine whether the licensee had identified all reasonable sources that could flood the rooms.

This constitutes one sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q)

a. Inspection Scope

On March 2 and March 24, 2005, the inspectors observed licensee training personnel preparing to give simulator training and an operating crew during an emergency plan drill. The inspectors reviewed compliance with training objectives, adequacy of plant procedures for responding to various scenarios, the crew's ability to use the procedures for responding to the simulator scenarios, the ability of the crew to identify, classify, and report emergency plan action levels, the trainers' ability to appropriately adjust scenario timelines for meeting training objectives, and the trainers' ability to adequately review crew performance. Additionally, 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 verify alarms;
- oversight and direction from supervisors; and
- group dynamics.

Crew performance in these areas was compared to licensee management expectations and guidelines as described in Davis-Besse operational and administrative procedures. The operational scenario included increasing reactor coolant pump vibration with subsequent seal failure, fuel failure, and loss of offsite power.

This constitutes one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's handling of operational and performance issues associated with the leakage and subsequent failure of heating coils in the air supply for the radwaste ventilation system. Specifically, the inspectors reviewed licensee's actions for mitigating the potential for further equipment damage from cold weather due to the loss of the normal heating of supply air and the licensee's actions to minimize the potential for airborne activity during reactor coolant sampling activities due to abnormal ventilation system lineups. Additionally, the inspection included a review of the following items:

- licensee's work scheduling practices to minimize activities that might be negatively impacted by lack of normal ventilation and to expedite repair and restoration of the heating coils;
- assignment of appropriate risk classification to maintenance activities associated with coils replacement;
- operations evolution order to operate the radwaste ventilation in a configuration not specifically addressed in existing procedures;
- capture of coiling coil deficiencies in either the corrective action system or the work order system, or both systems if appropriate;
- existing work orders and condition reports which addressed heating or cooling coils issues in other auxiliary building ventilation systems for the purpose of identifying any potential adverse trends;
- appropriateness of the maintenance rule system status determination for auxiliary building ventilation systems based on performance as reflected in work orders and condition reports; and
- appropriateness of goals and corrective actions for the long-term reliability of auxiliary building ventilation systems.

This constitutes one sample.

b. Findings

No findings of significance were identified.

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

.1 Replacement of the Bearing End Plate on Auxiliary Feedwater Pump 2

a. Inspection Scope

On March 10, 2005, during the performance of the quarterly auxiliary feedwater pump surveillance, an oil leak of approximately 4-5 drops per minute was discovered on auxiliary feedwater pump 2. The leakage was attributed to a crack on the bearing end plate of the pump's Terry turbine bearing.

The inspectors evaluated overall risk impact of the repair activities, which included; the removal of the inboard oil drain line and cover plate; the fabrication of a new cover plate; and reinstallation of the new cover plate and drain line.

This constitutes one sample.

b. Findings

No findings of significance were identified.

.2 Unexpected Trip of Breaker HBBF4

a. Inspection Scope

On March 15, 2005, at approximately 1252, breaker HBBF4 (13.8 KV feeder breaker to transformer BF4 and transformer BF6) tripped due to ground fault . As a result of the breaker trip, several non-vital electric loads were lost.

The inspectors evaluated the licensee's actions to identify and isolate faulted equipment, restore power to the F4 and F6 buses, and to assess the overall risk impact of losing the affected electrical loads on continued plant operation. As a result of their troubleshooting efforts, the licensee identified that a ground fault existed on a feeder cable which supplies electrical power to sampling equipment at the dike between Lake Erie and the Intake Canal.

This constitutes one sample.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Evolutions and Events (71111.14)

a. Inspection Scope

The inspectors evaluated the licensee's performance associated with the planned de-boration of the number 2 mixed bed demineralizer.

This constitutes one sample.

b. Findings

Introduction: A Non-Cited Violation of TS 6.8.1, having very low safety significance, was self-revealed when the control room operators failed to meet the requirements of administrative procedures which were established to ensure that plant operations are conducted in a competent and professional manner. Specifically, the control room operators did not demonstrate conservative actions when they failed to fully anticipate the plant response to a large boric acid addition to the reactor coolant system which was conducted as part of the planned de-boration of #2 mixed bed demineralizer. This was contrary to licensee's procedural requirements as outlined in DB-OP-00000, "Conduct of Operations," Revision 10, and NG-DB-00230, "Davis-Besse Nuclear Power Station Reactivity Management Program," Revision 01.

Description: On February 20, 2005, the licensee performed an evolution to reduce the boron concentration in the #2 mixed bed demineralizer. This was to be accomplished by adding approximately 230 gallons of boric acid to the makeup tank (which in turn would be added to the reactor coolant system), followed by approximately 1800 gallons of demineralized water, while diverting approximately 2000 gallons of reactor coolant, which had passed through the #2 mixed bed demineralizer, to the clean waste receiver tank. The licensee had determined that this approach would maintain the reactor coolant system inventory and the appropriate reactor coolant system boric acid concentration, while deborating the #2 mixed bed demineralizer to the desired boron concentration.

Although the plant procedures which provide guidance for the addition of boric acid to the reactor coolant system do not prohibit a batch addition of 230 gallons of boric acid, typically the volume of an acid addition is significantly smaller. Additionally, although the control room operators had appropriately evaluated the total impact of the addition of the 230 gallons of boric acid and 1800 gallons of demineralized water, they did not fully understand the impact that the large amount of boric acid (negative reactivity) would have on reactor power prior to the addition of demineralized water (which would dilute the RCS boric acid concentration and provide positive reactivity). To compensate for the negative reactivity which resulted from the boric acid addition, the integrated control system moved the control rods from a rod index of 291 to a rod index of 300 (all regulating rod groups fully withdrawn). At that time, the reactor operator took manual action to decrease the Unit Load Demand until all of the demineralized water was added, which allowed the control rod index to return to approximately 291.

The inspectors determined that the operators did understand that some change in control rod position may occur due to the addition of the boric acid, but they failed to properly anticipate and plan for the actual impact that the addition of such large amount of boric acid would have on control rod position and reactor power. As a result, the operators were forced to take actions which required an unplanned reactor power reduction of approximately 1.5 percent. The inspectors determined that the immediate actions taken by the licensee to address this issue were appropriate, and corrective actions taken prior to resumption of the mixed bed demineralizer de-boration activity

were adequate. This issue was entered into the licensee's corrective action program as CR 05-01427 and CR 05-01478.

Analysis: The inspectors determined that the control room operators not fully understanding the impact of the large boric acid addition on reactor power prior to making the boric acid addition was a performance deficiency warranting a significance evaluation. The inspectors concluded that the finding was greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," issued on June 20, 2003. The inspectors determined that the finding involved the human performance attribute of the Initiating Events cornerstone's objective which is to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding also affected the cross-cutting area of Human Performance because operations personnel failed to operate the plant in a controlled manner, as required by procedure DB-OP-00000, "Conduct of Operations," Revision 10, and did not ensure that the change in reactivity caused by a large boric acid addition was anticipated, as required by procedure NG-DB-00230, " DBNPS Reactivity Management Program," Revision 01.

The inspectors completed a significance determination of this issue using IMC 0609, "Significance Determination Process (SDP)," dated March 21, 2003, Appendix A, "Determining the Significance of Reactor Inspection Findings for at Power Situations," dated December 1, 2004. The inspectors concluded that 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, therefore, was of very low safety significance (Green).

Enforcement: Technical Specification 6.8.1, states, in part, that written procedures shall be established, implemented, and maintained covering applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, February, 1978. Regulatory Guide 1.33 Appendix "A" recommends that administrative procedures be prepared which cover the "authorities and responsibilities for safe operation and shutdown." Procedure DB-OP-00000, "Conduct of Operations," Revision 10, establishes administrative controls necessary to ensure that plant operations are conducted in a competent and professional manner. Specifically, step 6.2 states that operations personnel shall carry out their duties as delineated in Station Procedures, Policies, Directives, and Manuals. Procedure NG-DB-00230, "DBNPS Reactivity Management Program," Revision 01, step 6.2.1 states in part, that the intent is to maintain control of reactivity and prevent unplanned reactivity changes by: performing all reactivity manipulations in a controlled manner and in accordance with approved procedures; practicing conservative decision making at all times; and ensuring the affects of reactivity are anticipated and monitored. Contrary to these requirements, the control room operators did not demonstrate conservative actions when they failed to fully anticipate the plant response to a large boric acid addition to the RCS which was conducted as part of the planned evolution to de-borate the #2 mixed bed demineralizer. Because this finding was determined to have very low safety significance, and because this issue was entered into the licensee's corrective action program, this violation is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000346/2005005-01). The licensee entered this issue into the corrective action program as CR 05-01427 and CR 05-01478.

1R15 Operability Evaluations (71111.15)

.1 Air Void in Decay Heat Train 2 Suction Piping

a. Inspection Scope

The inspectors reviewed CR 05-01642 and the licensee's actions associated with the discovery that inadequate system restoration from planned maintenance activities introduced an air void in the decay heat piping between the reactor coolant system and decay heat pump 2.

This constitutes one sample.

b. Findings

Introduction: A Non-Cited Violation of TS 6.8.1, having very low safety significance, was self-revealed when licensee personnel, during review of configurations of decay heat piping, determined that recent system restoration from decay heat pump 2 seal refurbishment was not adequate to prevent the formation of an air void in the decay heat line from the RCS to decay heat pump 2. A void in the line could impede operators' efforts to establish decay heat cooling and also, if required, post loss of coolant accident boron precipitation control using decay heat lines. The post maintenance system restoration error was contrary to the licensee's procedural requirements as outlined in NOP-OP-1001, "Clearance/Tagging Program," Revision 4.

Description: On February 8, 2005, licensee personnel completed the replacement of a mechanical seal on decay heat pump 2 and subsequently attempted to refill the portions of piping that were drained to facilitate the planned work. The restoration of the system included refilling the 12 inch piping from the suction of pump to the normally closed train 2 decay heat valve from the RCS, DH-1518. During the fill of the piping, venting was accomplished from valve DH-174. This valve was physically located approximately 3.5 feet beneath the centerline of DH-1518. The filling of the line was accomplished in conformance with the guidance provided by the operating procedure for the decay heat system, DB-OP-06012, Revision 21 and the operations department prepared system restoration instructions in clearance EDB-SUB049-02-014.

On March 7, 2005, the licensee generated CR 05-01642 to document that the potential existed for an air void to exist in the decay heat piping due to the lineup used to refill the piping after completion of work on decay heat pump 2. The system restoration instructions, dated February 8, 2005, when compared to the piping isometrics, revealed to the licensee that the drained and refilled pipe had not been vented from an available high point vent. Subsequent ultrasonic readings on the pipe provided conformation that an air void did exist upstream and downstream of valve DH-1518. The licensee estimated that the air void was approximately 4 to 5 cubic feet. The affected piping would be utilized by operators for reactor core cooling using decay heat train 2 in operating modes 4, 5, and 6. Additionally, the line could be used for alternate reactor core boron precipitation control in a post loss of coolant accident environment.

Initial evaluation by the licensee concluded the system was operable because all functions of the decay heat and low pressure injection system required to be operable in Mode 1 were not impacted by the void in the decay heat line. However, licensee personnel did request a formal operability evaluation be performed and concurrently made preparations to utilize a vent valve that would remove the air void. The line was vented late on March 7, 2005.

Analysis: The inspectors determined that the finding was a performance deficiency warranting a significance determination because licensee personnel, in restoring systems, are expected to appropriately vent the system. The finding was related to the cross cutting area of Human Performance because licensee personnel had access to drawings that showed that the system would not be properly vented using the vent path specified in the restoration instructions. The inspectors determined that the finding was more than minor because it involved the human performance attribute of the Mitigating System cornerstone's objective which is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. A void in the line could impede operators' efforts to establish decay heat cooling and also, if required, post loss of coolant accident boron precipitation control using decay heat lines and decay heat train 2. The finding was of very low safety significance (Green) because the finding did not result in any loss of safety function and did not screen as significant using other applicable criteria.

Enforcement: Technical Specification (TS) 6.8.1, states, in part, that written procedures shall be established, implemented, and maintained covering applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, February 1978. Regulatory Guide 1.33 Appendix "A" recommends that administrative procedures be prepared which cover equipment control (e.g., locking and tagging). Regulatory Guide 1.33 also recommends that instructions be developed for filling, venting, and draining various systems including the shutdown/decay heat cooling system. Procedure NOP-OP-1001, "Clearance/Tagging Program," Revision 4, was implemented to establish administrative controls necessary for specifying actions to establish proper conditions for work and to restore from that work. Specifically, step 4.5.3 required determination of actions required to establish the proper conditions for the work and to restore from it. Step 4.6.1 further required an independent assessment that a developed clearance met the requirements of Section 4.5. Contrary to these requirements, the clearance preparer and person that performed the independent assessment did not ensure sufficient actions were developed to restore decay heat train 2 to a properly filled and vented condition after the conclusion of planned maintenance. Because this finding was determined to have very low safety significance, and because this issue was entered into the licensee's corrective action program, this violation is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000346/2005005-02). The licensee entered this issue into the corrective action program as CR 05-01642.

.2 Air Void in Low Pressure Injection Train 1 Recirculation Suction Piping

a. Inspection Scope

The inspectors reviewed CR 05-01605 and licensee's actions associated with the discovery that the plant piping configuration had the potential for an air void formation in the low pressure injection recirculation piping from the containment emergency sump to the decay heat/low pressure injection pump 1.

This constitutes one sample.

b. Findings

Introduction: The inspectors identified an unresolved item (URI) requiring further inspection. The URI was related to the actual impact of the air void located in the piping between the containment emergency sump and the decay heat/low pressure injection pump 1 on the operability of decay heat/low pressure injection train 1.

Description: On March 2, 2005, plant engineering personnel were reviewing operating experience documents associated with CR 02-08244, dated October 17, 2002, which addressed potential gas voiding in emergency core cooling system (ECCS) piping. As part of the corrective actions associated with CR 02-08244, a high point vent was to be installed in the train decay heat train 1. The high point vent was to be located in the 18 inch diameter low pressure injection piping, just outside of containment, leading from the emergency sump to decay heat/low pressure injection pump 1. The vent was never installed because the corrective action was closed after a licensee internal review determined that the benefit of the proposed modification, judged against internally developed criteria, did not warrant its installation.

During the 2005 engineering review, the licensee again identified that an air void could exist after certain normal refueling outage surveillance tests and documented the issue in CR 05-01605. Initial evaluation of the volume of air that could be present led licensee personnel to conclude that it was reasonable that the system remained operable. To verify that air was present, ultrasonic measurement of the affected piping was accomplished on March 4, 2005. Licensee personnel estimated that the piping contained an air void of approximately 2 cubic feet.

Licensee personnel discussed with external experts what the most likely impact that an air void of approximately 2 cubic feet would have on the operability of the decay heat system train 1. The preliminary assessments indicated that an air void of less than 5 cubic feet could probably be tolerated by the decay heat/low pressure injection pump. With that information the licensee concluded that it was reasonable to assume that the system was operable. Concurrent with that conclusion, the licensee commissioned a full study by an external consultant that would further review and document the preliminary information. Also, the licensee initiated work to design and install a high point vent on the line. The high point vent was installed on March 13, 2005 (see Section 1R17).

Assessment: Technical Specifications require the operability of 2 trains of low pressure injection during operating modes 1 through 3 with provisions for 1 train to be inoperable for a period of up to 7 days. The potential for an air void in low pressure injection train 1 was identified by the licensee in 2002. Since April 2004 the Davis-Besse plant operated at power for significant periods of time. During that same time period the licensee had declared, for short periods of time, low pressure injection train 2 inoperable for planned activities. During those time periods the licensee assumed that train 1 was operable. The licensee's evaluation of the impact on low pressure injection train 1 due to potential air voiding of the recirculation piping was not completed. Additional inspection effort is needed to review the licensee's completed evaluation of the impact of the air void (URI-05000346/2005005-03).

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors evaluated Engineering Change Package 05-0101-00, "Install Vent Valve on Decay Heat Pump 1-1 Suction Line From Containment Emergency Sump," as a sample of a permanent plant modification. The inspectors reviewed the modification prior to installation and testing to verify that the design basis, licensing basis, and performance capability of the Decay Heat Train 1 was not degraded by the on-line installation of the modification and specifically that the modification did not adversely impact the ability of decay heat pump 1 to take suction from the containment emergency sump. The inspectors evaluated the modification's design by performing a review of the modification's design assumptions and that installation of the modification did not place the plant in an unsafe condition. The inspectors reviewed the licensee's evaluation of the potential for the release of contaminated pressurized water into the auxiliary building as well as the possibility that some or all of the metal chips from drilling through the pipe could enter the suction piping during the installation of the vent valve. Additionally, the inspectors observed the mock-up installation of the socket and attended the infrequently performed test or evolution brief prior to installation of the modification.

This constitutes one sample.

b. Findings

No findings of significance were identified

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed post-maintenance testing activities to ensure that the testing adequately verified system operability and functional capability with consideration of the actual maintenance performed. The inspectors referenced the appropriate sections of the Technical Specifications, the Updated Safety Analysis Report, as well as the documents listed at the end of this report, to evaluate the scope of the maintenance and see that the work control documents required sufficient post-maintenance testing to

adequately demonstrate that the maintenance was successful and that operability was restored. The inspectors observed and evaluated test activities associated with the following samples:

- VT-2 and performance testing after replacement of CCW 256 (component cooling water essential line 1 to make-up pump 1 lube oil cooler supply stop check valve) on February 24 and 25, 2005; and
- auxiliary feedwater pump 2 quarterly test on March 10, 2005.

This constitutes two samples.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed the surveillance test and/or evaluated test data to determine whether the equipment tested met Technical Specifications, Updated Safety Analysis Report, and licensee procedural requirements, and that the equipment was capable of performing its intended safety functions. The inspectors used the documents listed at the end of this report to determine if the test met the Technical Specification frequency requirements; that the test was conducted in accordance with the procedures, including establishing the proper plant conditions and prerequisites; that the test acceptance criteria were met; and that the results of the test were properly reviewed and recorded. The following surveillances were evaluated:

- reactor coolant leakage identified and unidentified leakage measurement and calculation as performed during the period of March 27, 2005, to the morning of March 29, 2005; and
- boric acid pump 1 baseline test on February 25, 2005, following replacement of the pump motor.

This constitutes two samples.

b Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed temporary modifications 05-0008 and 05-0010. Temporary modification 05-0008 was superceded by 05-0010 after operating personnel questioned the methodology being employed in temporary modification 05-0008. The temporary

modifications both addressed providing temporary power to the pumps and fans for cooling the oil for the main transformer. The temporary power was needed to maintain transformer cooling while electrically isolating and replacing normal power supply relay components that had failed. The work was performed in close proximity to energized circuits and near the transformer's sudden pressure trip relay. The licensee treated the installation and removal of the temporary modification as an infrequently performed test and evolution which warranted additional briefings and additional oversight.

The inspectors reviewed the temporary modification and associated 10 CFR 50.59 screening against system requirements, including the Updated Safety Analysis Report and Technical Specifications, to determine whether there were any effects on system operability or availability and if consistency with plant documentation and procedures was maintained. The inspectors observed several temporary modification planning sessions; attended the infrequently performed evolution briefings on March 18 and 19, 2005; observed the installation activities up to and including the energization of one of two cooling groups with temporary power on March 19, 2005; and was present during the licensee's discussions regarding contingency actions should transformer cooling be lost. Additionally, the inspectors reviewed the work order governing the work and the restoration to normal power lineup, which occurred on March 20, 2005.

This constitutes one sample.

b. Findings

No findings of significance were identified.

EP6 Drill Evaluation (71114.06)

a. Inspection Scope:

The inspectors monitored the licensee's emergency preparedness exercises conducted on March 24, 2005, from various locations and perspectives. The observations included licensee preparations, evaluation of drill conduct, review of the drill critiques, and identification of weaknesses and deficiencies. 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 in the simulator control room, the technical support center, and the emergency operating facility. The inspectors evaluated the effectiveness of the licensee's communications, 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 drill critique to assure that weaknesses and deficiencies were acknowledged and appropriate corrective actions identified.

This constitutes one sample.

b. Findings:

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

Cornerstones: Barrier Integrity

.1 Reactor Safety Strategic Area

a. Inspection Scope

The inspectors performed a periodic review of the data reported by the licensee for the Performance Indicators listed below. The inspectors selected a sample of applicable licensee documentation to review to determine whether the data provided by the licensee for these Performance Indicators was complete and accurate. The inspectors used PI definitions and guidance contained in Revision 2 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to aid in their review of the PI data. The following two PIs were reviewed:

- Reactor Coolant System Leakage (January 2004 through December 2004); and
- Reactor Coolant System Activity (January 2004 through December 2004).

This constitutes two samples.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Daily Review

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment deficiencies or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This screening was accomplished by reviewing documents entered into the licensee corrective action program and review of document packages prepared for the licensee's daily Management Alignment and Ownership Meetings.

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153)

.1 Heating Coil Large Leak in the Auxiliary Building

a. Inspection Scope

On March 3, 2005, the licensee's control room received numerous fire alarms from various elevations in the auxiliary building. Additionally the control room received reports of smoke and a large amount of water near the fuel handling ventilation exhaust fans. The fire brigade was dispatched and found indication of steam and water but no smoke or fire. Further immediate investigation by the licensee found that the heating coils in the radwaste ventilation supply duct were leaking excessively which caused non-radioactive steam and water to be dispersed through several elevations of the auxiliary building. The isolation of the water to the heating coils retarded the dispersal of additional water and steam. The inspectors observed the licensee's response to the alarms and reviewed the followup actions.

This constitutes one sample.

b. Findings

No findings of significance were identified.

.2 (Closed) Licensee Event Report (LER) 05000346/2002-008-00 & -01: Containment Air Coolers (CACs) Collective Significance of Degraded Conditions.

The inspectors reviewed Revision 0 and Revision 1 of the LER and reviewed supporting evaluations, analyses, and calculations to validate the LER's conclusion that the degraded CACs supported operability (NRC Inspection Report 05000/346-2004017). During that inspection the inspectors identified two URIs. These URIs were reviewed and closed in Section 40A5 of the current inspection report. This was a past operability question since the licensee completely rebuilt all three of its CACs prior to restart in early 2004. These LERs are closed.

This constitutes one sample.

4OA4 Cross-Cutting Aspects of Findings

A finding described in Section 1R14 of this report had, as its primary cause, a human performance deficiency, in that, operations personnel failed to operate the plant in a conservative manner, as required by procedure DB-OP-0000, "Conduct of Operations," Revision 10, and did not ensure that the change in reactivity and thus reactor power caused by a large boric acid addition was anticipated, as required by procedure NG-DB-00230, "DBNPS Reactivity Management Program," Revision 01.

A finding described in Section 1R15 of this report had, as its primary cause, a Human Performance deficiency in that licensee personnel had access to drawings which

showed that the decay heat system train 2 piping from the RCS would not be properly vented using the vent path specified in the restoration instructions.

4OA5 Other Activities

.1 (Closed) URI 05000346/2004017-02: Failure to provide adequate basis for the conclusion stated in Revision 1 of LER 05000346/2002-008

Introduction

LER 02-008 was issued on December 31, 2002, to report degraded CACs. The principal issues were related to the structural adequacy and thermal performance of the CACs. The LER stated that an engineering evaluation was being finalized to assess the structural issues and an evaluation of thermal performance would be performed to determine past operability.

Revision 1 of the LER was issued on May 6, 2003, and stated in part, that while the corrosion issues and design basis stress analysis issues resulted in a degraded condition, the CACs remained operable. With respect to thermal performance, the LER stated in part, that the evaluation concluded the effects of the degraded air side and water side performance did not render the CACs inoperable with respect to emergency core cooling system (ECCS) pump room heatup and equipment environmental qualification.

Description

During the Problem Identification and Resolution Inspection (NRC Inspection Report 05000346/2004017) dated January 30, 2005, the inspectors identified that the licensee's basis for concluding that the degraded CACs were operable with respect to (ECCS) pump room heatup and equipment environmental qualification was not clearly documented.

During that inspection, the NRC inspectors reviewed the LER referenced "Assessment of Thermal Performance for the Containment Air Coolers", dated April 30, 2003, which stated that the increase in temperature will result in increased ECCS pump room heat load. This assessment stated that the heat load calculation for the ECCS pump rooms was being revised to incorporate less conservative film coefficients for heat transfer from hot piping and that an effort was underway to revise the equipment qualification temperature from 125° F to 140° F. The fact that these evaluations were underway at the time, questioned the basis for the conclusion stated in Revision 1 of the above mentioned LER regarding the ability of the degraded CACs to support equipment qualification in the ECCS pump rooms. The NRC inspectors reviewed the licensee's evaluation of this issue.

Effectiveness of Corrective Actions

The licensee issued CR 04-07673 to review their basis for concluding the ability of the degraded CACs to support equipment qualification in the ECCS pump rooms. The

licensee's review of supporting documentation concluded that the statement in question contained in Revision 1 of LER 02-008 was based on inferred engineering judgement at that time. Their conclusion appeared to be based primarily on the statement "The thermal performance of the CACs is degraded, however, the coolers will perform their intended design function." contained in the above mentioned Assessment of Thermal Performance for the CACs.

The ability of the degraded CACs to support equipment qualification in the ECCS pump rooms was further demonstrated by the licensee's evaluation of past operability of the decay heat removal (DHR) and high pressure injection (HPI) pumps discussed below. While the basis for the conclusion stated in the LER was not considered to be well documented, no violation of NRC requirements was identified.

.2 (Closed) URI 05000346/2004017-03: Failure to resolve discrepancy following conclusion from Calculation C-NSA-032.02-006, "ECCS Pump Room Equipment High Temperature Qualification."

Introduction

Revision 1 of LER 02-008 was issued on May 6, 2003 and stated in part, that while the corrosion issues and design basis stress analysis issues resulted in a degraded condition, the CACs remained operable. With respect to thermal performance, the LER stated in part, that the evaluation concluded the effects of degraded air side and water side performance did not render the CACs inoperable with respect to ECCS pump room heatup and equipment environmental qualification.

Description

During the Problem Identification and Resolution Inspection (NRC Inspection Report 05000346/2004017) dated January 30, 2005, the inspectors reviewed the LER referenced "Assessment of Thermal Performance for the Containment Air Coolers", dated April 30, 2003, which stated that the increase in temperature will result in increased ECCS pump room heat load. This assessment stated that the heat load calculation for the ECCS pump rooms was being revised to incorporate less conservative film coefficients for heat transfer from hot piping and that an effort was underway to revise the equipment qualification temperature from 125° F to 140° F. During an NRC review, the inspectors identified that FENOC Calculation C-NSA-032.02-006, Revision 1, reported that for an initial forebay temperature of 90° F, the ECCS Pump room temperature could get as high as 137° F post-LOCA. The equipment qualification for the ECCS Pump room in effect at that time was 125° F.

"ECCS Pump Room Equipment High Temperature Qualification," (Attachment to Calculation C-ECS-207.10-003, Revision 0), evaluated the qualification of active mechanical and Class 1E electrical components in the pump rooms at the elevated temperature of 140° F. This calculation concluded, in part, that the lubrication oil in the DHR and HPI pump motors was not found acceptable for this higher temperature. During the Problem Identification and Resolution Inspection the NRC inspectors were

not provided adequate technical justification to conclude that the degraded CACs supported the existing equipment qualification for the ECCS Pump room.

Effectiveness of Corrective Actions

The licensee issued CR 04-07662 to evaluate past operability of the DHR and HPI pumps. To support the past operability review, the licensee performed a heatup analysis in the ECCS pump rooms using worst case input parameters based on historical data (Calculation C-NSA-032.02-008, Revision 0, "Best Estimate ECCS Pump Room Heatup Analysis"). Historical data for the ultimate heat sink, heat exchanger efficiency, and service water flow rate parameters were all found to be conservative with respect to the design basis analyses. No modeling methods were changed from those utilized for the current accident analysis.

Two heatup analyses were performed to evaluate bounding conditions: (1) The maximum sump temperature evaluation scenario which resulted in the highest pipe heat loads; and (2) The maximum ultimate heat sink temperature evaluation scenario which resulted in the lowest heat transfer for the ECCS pump room coolers.

Results from both scenarios showed that the ECCS pump room temperature would have remained less than 125° F during post LOCA operation. Thus, the ECCS room temperature would not have exceeded the original equipment qualification temperature of 125° F. No violations of NRC requirements were identified.

.3 Review of Independent Assessment Plan for the Davis-Besse Nuclear Power Station Operations Performance (93812)

a. Inspection Scope

As part of the inspection activities performed to verify the licensee's compliance with the requirements for independent assessments, as described in the March 8, 2004, Confirmatory Order Modifying License No. NPF-3 (EA 03-214), the inspectors verified that the licensee submitted, per letter dated March 15, 2005, the required inspection plan for the Operations Performance Independent Assessment prior to the performance of the CY2005 annual Operations Assessment, which is currently scheduled for June 2005. As part of the inspection activities, the inspectors reviewed the scope of the Independent Assessment Plan and the qualifications of the team members designated to perform the assessment.

b. Observations and Findings

After evaluating the Operations Performance Independent Assessment Plan for CY2005, the inspectors determined that the scope and depth of activities outlined in the plan would be sufficient to obtain an appropriate assessment of Operations department performance.

The inspectors evaluated the qualifications and determined that the individuals designated to perform the assessment were independent from FENOC and that they

had the necessary expertise to accomplish the assessment, as outlined by the assessment plan.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. B. Allen and other members of licensee management on April 6, 2005. The licensee acknowledged the findings presented. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Allen, Director, Plant Operation
M. Bezilla, Site Vice President
B. Boles, Manager, Plant Engineering
J. Grabnar, Manager, Design Engineering
L. Harder, Manager, Radiation Protection
R. Hruby, Manager, Nuclear Oversight
D. Kline, Manager, Security
S. Loehlein, Director, Station Engineering
L. Myers, Chief Operating Officer, FENOC
K. Ostrowski, Manager, Plant Operations
C. Price, Manager, Regulatory Compliance
R. Schrauder, Director, Performance Improvement
M. Trump, Manager, Training

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000346/2005005-03	URI	Long Term Operability of Low Pressure Recirculaton Train 1 With a Piping Arrangement that Allowed an Air Void in the Piping from the Containment Emergency Sump.

Opened and Closed

05000346/2005005-01	NCV	Control Room Operators Did Not Demonstrate Conservative Actions When They Failed to Fully Anticipate the Plant Response to a Large Boric Acid Addition to the Reactor Coolant System Which Was Conducted as Part of the Planned De-boration of #2 Mixed Bed Demineralizer.
05000346/2005005-02	NCV	Licensee's Decay Heat System Restoration from Planned Maintenance Permitted Formation of an Air Void in Decay Heat Line from Reactor Coolant System to the Decay Heat Pump #2

Closed

05000346/2004017-02	URI	Failure to Provide Adequate Basis for the Conclusion Stated in Revision 1 of LER 05000346/2002-008
05000346/2004017-03	URI	Failure to Resolve Discrepancy Following Conclusion from Calculation C-NSA-032.02-006, “ECCS Pump Room Equipment High Temperature Qualification”
05000346/2002-008-00 05000346/2002-008-01	LER	Containment Air Coolers Collective Significance of Degraded Conditions

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.

1R04 Equipment Alignment

Drawing OS-017A; Auxiliary Feedwater System; Revision 20
Drawing OS-017B; Auxiliary Feedwater Pumps and Turbines; Revision 23
DB-OP-06233; Auxiliary Feedwater System; Revision 18
Drawing C-675; Component Cooling System Anchor A-400; Revision 04
Drawing C-674; Component Cooling System Anchor A-398; Revision 06
Drawing M-036A; Component Cooling Water System; Revision 26
Drawing OS-21, Sheet 1; Component Cooling Water System; Revision 33
Drawing OS-21, Sheet 2; Component Cooling Water System; Revision 23
DB-OP-06262; Component Cooling Water System Procedure; Revision 11

1R05 Fire Protection

Davis-Besse Nuclear Power Station Fire Hazard Analysis Report
Drawing A-225F; Fire Protection General Floor Plan elevation 623'; Revision 14
Drawing A-221F; Fire Protection General Floor Plan elevation 545' and 565'; Revision 07
Drawing A-223F; Fire Protection General Floor Plan elevation 585'; Revision 17
PFP-AB-237; Auxiliary Feed Pump 1 Room; Revision 03
PFP-TB-334; Turbine Pedestal Area; Fire Area II; Revision 25
DB-OP-02529; Fire Procedure; Revision 03

1R06 Flood Protection

Drawing OS-047B, Sheet 3; Fire Suppression System; Revision 05
Drawing OS-053, Sheet 1; Station Drainage System; Revision 30
Drawing A-0230F; Fire Protection Water Treatment Building, Intake Structure, and Diesel Oil Storage; Revision 09
SAP Order 200077962; PM 1936 - Inspect SW Strainer 2
RA-EP-02880; Internal Flooding; Revision 02
CR 02-10470; CATs Rollover - Flood and High Energy Line Break Barrier (HELB) Control
Standing Order 04-011; Non-Safety Related Equipment Credited with Flood Mitigation in the USAR; Revision 01
CR 05-01735; Flood Barrier Evaluation, CR-RFA (NRC Identified)

1R11 Licensed Operator Requalification Program

Applicable Drill Simulator Guide for the Observed Scenario
DBBP-TRAN-0017; Conduct of Simulator Training; Revision 01
DBBP-OPS-0001; Attachment H; Operations Section Conduct for Excellence; Revision 04
CR 05-01908; EP Drill - Simulator Tracking CR

1R12 Maintenance Effectiveness

Operations Evolution Order entitled Operation of Radwaste Exhaust Fan; March 4, 2005
Drawing OS-34, Sheet 1; Auxiliary Building Radioactive HVAC Systems; Revision 15
Drawing OS-34, Sheet 2; Auxiliary Building Radioactive HVAC Systems; Revision 19
CR 05-01608; Rad Waste Heating Coil Leak
DB Plant Health Report; Balance of Plant Systems Group Windows 5, 6, 8, 11, 12, 13, and 16; 4th Quarter 2004
CR 03-09203; Lack of Station Heating Causing Equipment Concerns
CR 01-03449; ECCS Room Cooler #5 Tube Coil Leak
SAP Order 200143665; E39 - Replace Leaking Coil

1R13 Maintenance Risk Assessment and Emergent Work Control

CR 05-01713; #2 Aux Feed Pump Turbine Oil Leak/Cover Crack
WO 200144124; Replace Oil Well Cover
CR 05-01784; Loss of Beach Feeder, F4, and F6 Busses Due to Ground Fault on HBBF4
TM No. 05-0011; DB-BF4A Beach 480 V Load Center

1R14 Personnel Performance During Nonroutine Evolutions and Events

CR 05-01427; Group 7 and Reactor Power Pertebations During #2 Demineralizer Operations
CR 05-01478; Common Cause Review - Reactivity Changes by RCS Boric Acid Additions
NG-DB-00230; DBNPS Reactivity Management Program; Revision 01
DB-OP-00000; Conduct of Operations; Revision 10

1R15 Operability Evaluations

DB-OP-06012; Decay Heat and Low Pressure Injection System Operating Procedure; Revision 22
Drawing OS-004, Sheet 1; Decay Heat Removal/Low Pressure Injection System; Revision 39
CR 05-01642; Decay Heat Train 2 Suction Piping - Refilling/Restoration Deficiency
USAR Section 6.3.3.1.2.1; Boron Precipitation Control; Revision 22
CR 05-01781; Mechanism Not Available to Track Past Operability Review of CR 05-01605
CR 02-08244; SHRR - Restart Checklist Consideration of Industry OE

CR 05-01605; RFA CR - Air Intrusion to DH Emergency Sump Suction Piping
CR 05-01750; Subsequent QC UT Inspection Identified Void Remains in Piping Post DH173 Venting
Drawing M-233B; Emergency Core Cooling System Pump Suction Piping; Revision 20
Drawing M-233C; Decay Heat Removal System Ctmt.-Aux. Bldg. Normal Cooldown; Revision 15
Tagging Clearance EDB-SUB049-02-014; DH Pump 1-2; February 6, 2005
NOP-OP-1001; Clearance/Tagging Program; Revision 04

1R17 Permanent Plant Modifications

ECR 05-0101-00; Install Vent Valve on Decay Heat Pump 1-1 Suction Line From Containment Emergency Sump
WO 200143729; ECR 05-0101-00 Provide Vent for DH9B
CR 05-01605; RFA CR - Air Intrusion to DH Emergency Sump Suction Piping
CR 05-01746; Delay in Start of Emergent Work on Decay Heat Loop #1 Vent Addition

1R19 Post-Maintenance Testing

DB-PF-03071; CCW Train 1 Valve Testing; Revision 09
SAP Order 200005851; ECR 04-0188-00 CC256:Replace Stop Check
ECR 04-0188-00; Equivalent Replacement of CC256; Revision 00
DB-SP-03160; AFP2 Quarterly Test

1R22 Surveillance Testing

DB-SP-03357; RCS Water Inventory Balance; Revision 07
Davis-Besse Reactor Coolant System Integrated Leakage Program Manual; Revision 01
SD-037A; Chemical Addition System; Revision 3
DB-PF-03550; Boric Acid Pump 1 Baseline Test; Revision 01

1R23 Temporary Plant Modifications

Temporary Modification 05-0008; Temporary Power to Main Transformer's Cooling Equipment; February 22, 2005
Temporary Modification 05-0010; Temporary Power to Main Transformer's Cooling Equipment; March 14, 2005
CR 05-01804; Nuclear Oversight Review of Transformer Maintenance Preparations
NG-EN-00313; Control of Temporary Modifications; Revision 05
SAP Order 200140154; X1 Contactor Failure, Replace Contractors
SAP Order 200141574; TM 05-0010 Restoration

EP6 Drill Evaluation

Emergency Response Integrated Drill Manual
RA-EP-01700; Alert; Revision 01
RA-EP-01800; Site Area Emergency; Revision 01
RA-EP-01900; General Emergency; Revision 03

RA-EP-02245; Protective Action Guidelines; Revision 02
RA-EP-02520; Assembly and Accountability; Revision 03
RA-EP-02530; Evacuation; Revision 01

4OA2 Identification and Resolution of Problems

CR 05-01712; Past Operability and Reportability Requested Due to AFP 2 Speed

4OA3 Event Followup

CR 05-01608; Rad Waste Heating Coil Leak

40A5 Other Activities

LER 05000346/2002-008; Containment Air Coolers Collective Significance of Degraded Conditions; Revision 1
CR 04-07673; NRC PI&R Inspection - Documentation of Oil Acceptance (Pass Operability)
C-NSA-032.02-006; ECCS Pump Room Equipment High Temperature Qualification; Revision 0
C-NSA-032.02-008; Best Estimate ECCS Pump Room Heatup Analysis; Revision 0
Operations Performance Independent Assessment; March 15, 2005

LIST OF ACRONYMS USED

ADAMS	Agency-wide Document Access and Management System
AFP	Auxiliary Feedwater Pump
CAC	Containment Air Cooler
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
DHR	Decay Heat Removal
ECCS	Emergency Core Cooling System
FENOC	FirstEnergy Nuclear Operating Company
HPI	High Pressure Injection
IMC	Inspection Manual Chapter
IR	Inspection Report
LER	Licensee Event Report
NCV	Non-Cited Violation
NRC	United States Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicator
RCS	Reactor Coolant System
SDP	Significance Determination Process
SW	Service Water
TS	Technical Specifications
URI	Unresolved Item
USAR	Updated Safety Analysis Report
WO	Work Order