

January 30, 2005

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 PROBLEM IDENTIFICATION AND RESOLUTION  
INSPECTION REPORT NO. 05000346/2004017

Dear Mr. Bezilla:

On December 16, 2004, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Davis-Besse Nuclear Power Station. The enclosed inspection report documents the inspection findings which were discussed on December 16, 2004, with you and other members of your staff.

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

For this 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 for assessment of findings.

The inspectors concluded that implementation of the licensee's corrective action program was safe for continued operation of the plant.

Based on the results of this inspection, the NRC has determined that violations of NRC requirements occurred. The report documents three inspector-identified findings of very low safety significance each of which involved a violation of NRC requirements. Because these violations were of very low safety significance and because they were entered into your corrective action program, the NRC is treating these 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 05000346/2004017  
w/Attachment: Supplemental Information

cc w/encl: The Honorable Dennis Kucinich  
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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-346

License No: NPF-3

Report No: 05000346/2004017

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Davis-Besse Nuclear Power Station

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

Dates: November 29 through December 16, 2004

Inspectors: D. Passehl, Project Engineer  
J. Jacobson, Senior Metallurgical Engineer  
J. Rutkowski, Resident Inspector  
B. Jose, Reactor Engineer  
R. Smith, Reactor Inspector

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000346/2004017; 11/29/2004 - 12/16/2004; Davis-Besse Nuclear Power Station; Problem Identification and Resolution.

The inspection was conducted by a senior project engineer, a resident inspector, and three region-based inspectors. Three Green findings, which also were associated with Non-Cited Violations, were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)." Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### Identification and Resolution of Problems

The inspectors concluded that implementation of the licensee's corrective action program was safe for continued operation of the plant. Overall, the licensee was effective in identifying and characterizing problems. The significance threshold for entering issues into the program was appropriate. Past weaknesses in the trending program had begun to show improvement. The inspectors identified an example of ineffective problem identification for two occurrences when licensee personnel failed to initiate a condition report for conditions adverse to quality associated with the auxiliary feedwater system.

In most instances issues that were identified were appropriately evaluated and prioritized. The inspectors identified a problem concerning failure to implement the corrective action procedure for evaluations of conditions that were rejected by the site Corrective Action Review Board. For the majority of samples reviewed by the inspectors, corrective actions were implemented in a timely manner commensurate with the safety significance of the issues. The inspectors identified an area of concern regarding the failure to adequately and effectively correct degradation of underground cables.

The licensee's audits and assessments of the corrective action program were of appropriate depth and scope, and findings and recommendations were appropriately captured. The inspectors reviewed the "Submittal of Independent Assessment Report of Corrective Action Program Implementation for the Davis-Besse Nuclear Power Station" report. The inspectors performed this review 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. Overall, the independent assessment activities were of sufficient depth and scope and were adequately documented. Areas for Improvement developed by the licensee to address corrective action program deficiencies were captured in condition reports and were generally timely. Enhancements or good practices that were developed to address observations in the independent inspectors' report were termed "Noteworthy Items" and were also captured in condition reports as warranted.

The inspectors' review of a sample of closed initiatives from Revision 6 of the Davis-Besse Nuclear Power Station Operational Improvement Plan, Operating Cycle 14, revealed that the licensee's actions were properly implemented.

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

**Cornerstone: Mitigating Systems**

- C Green. The inspectors identified a finding of very low significance associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings, for failure to initiate a condition report for conditions adverse to quality in the auxiliary feedwater system. The inspectors identified two conditions adverse to quality that had not been entered into the corrective action program. The inspectors determined that the failure to initiate condition reports for conditions adverse to quality in the auxiliary feedwater system was greater than minor because if left uncorrected the issue would become a more significant safety concern involving programmatic and equipment issues.

The inspectors determined that the finding was not suitable for SDP evaluation because the failure to initiate the condition reports did not directly result in degraded or inoperable equipment. Therefore, this finding was reviewed by Regional Management, in accordance with IMC 0612 Section 05.04c, and determined to be of very low safety significance. (Section 4OA2.1.c.1)

- C Green. The inspectors identified a finding of very low significance associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to assure that adequate and timely actions were promptly identified and implemented to address several underground wetted cable issues, a condition adverse to quality. This inspector-identified issue was greater than minor because if left uncorrected, the issue could become a more significant safety concern and could affect the mitigating systems attributes of equipment performance reliability.

The inspectors evaluated the finding using Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening. The inspectors determined that the finding (1) did not result in a design or qualification deficiency confirmed to result in a loss of function per NRC Generic Letter 91-18; (2) did not represent an actual loss of safety function; (3) did not result in a loss of safety function of a single train for greater than the Technical Specification allowed outage time; (4) did not represent an actual loss of safety function of one or more non-Technical Specification trains designated as risk significant per the Maintenance Rule for greater than 24 hours; and (5) did not screen as potentially risk significant due to seismic, fire, flooding, or severe weather initiating events. (Section 4OA2.3.c)

**Cornerstone: Other**

- C Green. The inspectors identified a finding of very low significance associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings, for failure to follow the corrective action procedure and implement remediation requirements following rejection of two apparent cause evaluations. This inspector-identified issue was greater than minor because if left uncorrected the issue would become a more significant safety concern involving the

implementation of the corrective action program for significant conditions adverse to quality and conditions adverse to quality.

The inspectors determined that the finding was not suitable for SDP evaluation because the failure to remediate the evaluators of the condition reports did not directly result in degraded equipment. Therefore, this finding was reviewed by Regional Management, in accordance with IMC 0612 Section 05.04c, and determined to be of very low safety significance. The finding was not greater than very low safety significance because no safety-related equipment was rendered inoperable. (Section 4OA2.2.c.2)

**B. Licensee-Identified Violations**

No findings of significance were identified.

## REPORT DETAILS

### 4. OTHER ACTIVITIES (OA)

#### 4OA2 Identification and Resolution of Problems (71152)

##### .1 Effectiveness of Problem Identification

###### a. Inspection Scope

The inspectors conducted a review of Davis-Besse's process for identifying and correcting problems at the plant. The inspectors reviewed issues related to the seven cornerstones of safety to determine if problems were appropriately identified, characterized, and entered into the corrective action program. More specifically, the inspectors evaluated issues identified by the licensee, including issues identified during audits or self assessments; issues identified by the NRC during routine, team, and special inspections; issues related to NRC Non-Cited Violations; and issues identified through NRC generic communications and through other industry operating experience exchange mechanisms. In addition, the inspectors performed a focused review of issues associated with the auxiliary feedwater system, to verify that work orders and other actions were initiated to address conditions adverse to quality.

A listing of the specific documents reviewed during the inspection is attached to the report.

###### b. Assessment

The inspectors concluded that the licensee was generally effective in identifying and appropriately characterizing problems. The significance threshold for entering issues into the program was appropriate. The inspectors identified a Non-Cited Violation (Green) for two occurrences when licensee personnel failed to initiate a condition report for conditions adverse to quality in the auxiliary feedwater system.

##### (1) Assessment of the Effectiveness of the Trending Program in Identifying Problems

The inspectors reviewed the licensee's progress in improving the trend program at Davis-Besse. The NRC and other organizations noted in the past that trend reports were not effective. The trend reports did not adequately identify trends or identify sufficient actions to resolve or reverse negative trends.

The inspectors reviewed Condition Report 04-04660, Corrective Action Program and Trends, which captured an area for improvement involving the condition report and self-evaluation trending processes. Corrective Action 2 specified actions to improve the 3<sup>rd</sup> Quarter 2004 Trend Report. The inspectors reviewed this trend report, dated November 15, 2004, and interviewed the Performance Improvement staff regarding efforts to improve the trending program.

The inspectors determined that the quality of the 3<sup>rd</sup> Quarter 2004 Trend Report was a good improvement over previous reports. The performance improvement staff benchmarked trend reports from several other utilities to determine ways that Davis-Besse's trend reports could be improved. The 3<sup>rd</sup> Quarter 2004 Trend Report placed more emphasis on active condition report trends instead of listing noteworthy events that occurred during the quarter. The licensee assessed condition reports for indications of adverse trends, generic problems, and repetitive conditions requiring additional corrective actions. The executive summary of the Trend Report listed new trends, previously identified trends, and closed trends, including a prognosis of improving, stable, or degrading. For each trend, the body of the report included a description of the issue, analysis, and conclusion. Condition Reports were appropriately referenced for the trends that were discussed.

The inspectors concluded that the 3<sup>rd</sup> Quarter 2004 Trend Report represented a good effort to improve the overall quality of the site trend program. However, the inspectors also concluded that insufficient time has elapsed to assess the effectiveness of the implementation of improvements to the trending program. Continued management attention is needed to focus on trending improvement initiatives.

(2) Assessment of Implementation of the Operating Experience Program

The inspectors reviewed the licensee's Operating Experience program with emphasis on the use of operating experience within the operations department. Specifically, the inspectors reviewed the governing document for the Operating Experience Assessment Program, NG-NA-0305, Revision 6. In addition, the inspectors assessed the operations' department review of operating experience reports and its handling and distribution of operating experience. The inspectors also sampled seven condition reports involving operating experience which were assigned to the operations department for review.

The inspectors noted that the licensee's procedure for reviewing and capturing lessons from operating experience utilized the corrective action program to identify and track review of various operating experience documents. These documents included NRC Information Notices, Significant Operating Experience Reports, Significant Event Reports, Significant Event Notifications, and Operation and Maintenance Reports.

The inspectors identified some minor examples of problems:

- C The licensee's governing procedure, NG-NA-0305, states that the Station Operating Experience Coordinator shall ensure that a review of the operating experience program is periodically performed. However, the term "periodically" is not defined and the inspectors did not find an identifiable periodicity for performing the review of the operating experience program. A self-assessment report for the Operating Experience Assessment Program, that was provided to the inspectors, showed assessment dates of June 10 through 14, 2002. A more recent similar assessment was not provided.
  
- C The operations department had one individual who regularly reviewed operating experience reports. As appropriate, the individual distributed the reports within

the operations department and added it to a database used by the department for pre-job briefings. The inspectors did not identify where this process is documented.

(3) Assessment of Various Failed Surveillance Tests

The inspectors reviewed a random sample of failed surveillance tests from various systems to verify that actual or potential conditions adverse to quality were being captured and that appropriate condition reports were initiated.

The inspectors reviewed a list identifying 22 failed surveillance tests in 2004 and verified, as appropriate, condition reports were initiated. The inspectors selected six condition reports from the list and verified that actions within the condition reports appeared reasonable. The inspectors determined that there were no existing or unaddressed operability equipment concerns. The inspectors did not identify any items of significance.

(4) Assessment of Condition Reports Written on the Auxiliary Feedwater System

The inspectors reviewed various condition reports initiated in 2004, primarily associated with the auxiliary feedwater system, to verify that, as appropriate, work orders and other actions were initiated to address conditions identified. The inspectors' review included whether maintenance rule determinations were requested or the need for operating experience reports was considered. The inspectors' review did not identify any items of significance.

The inspectors were provided a listing of approximately 100 condition reports written since January 2004 on the auxiliary feedwater system. From that list, the inspectors selected 27 condition reports to review. The inspectors determined that the licensee had requested, as appropriate, maintenance rule determinations by the engineering staff and initiated appropriate reviews to determine if operating experience reports were warranted. The inspectors determined that the licensee's reviews were completed in a satisfactory period of time and that responses appeared reasonable. However, as discussed in the next Section of this report, the inspectors identified two occurrences where licensee personnel failed to initiate a condition report for conditions adverse to quality in the auxiliary feedwater system.

c. Findings

(1) Failure to Initiate a Condition Report for Conditions Adverse to Quality in the Auxiliary Feedwater System

The inspectors identified a Green Finding associated with a Non-Cited Violation of 10CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to properly implement procedure NOP-LP-2001, "Condition Report Process," and initiate condition reports for failures, malfunctions, or deficiencies identified in safety related equipment. The inspectors identified two occurrences where licensee personnel

failed to initiate a condition report for conditions adverse to quality in the auxiliary feedwater system.

### Introduction

The inspectors were provided a listing of approximately 175 work orders that were written on the auxiliary feedwater system since December 2003. From this list, the inspectors randomly selected 40 work orders to verify that conditions identified in work orders, were, as appropriate, supported by condition reports.

### Description

In reviewing the work orders, the inspectors identified that two work orders should have had a corresponding condition report initiated. The two work orders were:

- C SAP Order 200084608 - this work order was written to repair a packing leak on Valve ST132IN, the inlet isolation valve for Steam Trap 132 on the main steam line to Auxiliary Feedwater Turbine 2. This warranted a condition report to formally allow an operational review of the condition, including personnel safety considerations, and for trending. The licensee initiated Condition Report 04-07507.
- C SAP Order 20115290 - this work order was written to repair seat leakby on Valve MS131, the drain for Steam Trap 131 on the main steam line to Auxiliary Feedwater Turbine 2. This warranted a condition report to formally allow an operational review of the condition, including review of the condition to better plan work, and for trending. The licensee initiated Condition Report 04-07508.

The inspectors determined that the listed SAP Orders and the identified conditions were not significant enough to raise questions on system operability. The inspectors questioned the licensee on the extent of the issue since the inspectors had found these issues in the review of 40 work orders. The licensee initiated Condition Report 04-07730 to investigate this concern. CR 04-07730 included a reference to Condition Report 04-06028 which documented different instances of condition reports not being written per expectations or procedures.

Procedure NOP-LP-2001, "Condition Report Process," is a quality-related administrative procedure. This procedure stated that:

- C A condition adverse to quality was an all inclusive term in reference to any of the following: failures, malfunctions, deficiencies, deviations, defective hardware and non-conformance to quality, augmented quality, or nuclear safety-related equipment, programs, or processes.
- C Management is responsible for ensuring all conditions adverse to quality identified by employees are entered into the corrective action program.

- C A condition report shall be initiated to address equipment issues that do not meet expectations or when a work document has been generated for hardware deficiencies and there are indications of adverse equipment performance trends for equipment not intended to run to failure.

### Analysis

The inspectors determined that the failure to initiate condition reports for conditions adverse to quality in the auxiliary feedwater system was a performance deficiency. This inspector-identified issue was greater than minor because if left uncorrected the issue would become a more significant safety concern involving programmatic and equipment issues. In addition, the inspectors determined that the Reactor Safety Cornerstone attributes of equipment performance and/or configuration control were affected. Finally, the inspectors determined that the issue affected the mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events.

The inspectors determined that the finding was not suitable for SDP evaluation because the failure to initiate the condition reports did not directly result in degraded or inoperable equipment. Therefore, this finding was reviewed by Regional Management, in accordance with IMC 0612 Section 05.04c, and determined to be of very low safety significance.

### Enforcement

10 CFR 50, Appendix B, Criterion V, required that activities affecting quality shall be prescribed by documented instructions or procedures of a type appropriate to the circumstances and shall be accomplished with those instructions or procedures. Procedure NOP-LP-2001, "Condition Report Process," was a quality-related administrative procedure requiring that conditions adverse to quality identified by employees be entered into the corrective action program. Contrary to those requirements, the inspectors identified two conditions adverse to quality that had not been entered into the corrective action program. Because the violation was of very low safety significance and the events were subsequently entered into the licensee's corrective action program (CR 04-07730), this violation was being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000346/2004017-01).

## .2 Prioritization and Evaluation of Issues

### a. Inspection Scope

The inspectors evaluated whether the licensee appropriately prioritized and assessed issues in the corrective action program. To accomplish this, the inspectors selected a sample of condition reports, inspection findings, and other reported problems for review. The inspectors evaluated a sample of issues that were identified since November 2003, the approximate end of the NRC's previous

review of the corrective action program Davis-Besse Corrective Action Team Inspection. (NRC Inspection Report 50-346/03-10)

The inspectors focused on condition reports and inspection findings with potential equipment operability and reportability issues. The inspectors reviewed the depth and scope of root and apparent cause analyses; adequacy of proposed corrective actions; and consideration of extent of condition, generic implications, common causes, and previous occurrences. The inspectors examined supporting documents such as completed work orders, surveillances and procedures, modification packages, and piping and instrument diagrams. In addition, the inspectors attended one of the licensee's Management Alignment and Ownership Meeting, and a Corrective Action Review Board meeting. The purpose of attending these meetings was to observe the licensee's handling of new condition reports and root and apparent cause evaluations.

A listing of the specific documents reviewed during the inspection is attached to the report.

b. Assessment

The inspectors noted that, in general, issues were appropriately characterized and classified, appropriate evaluations were conducted, and the corrective action process was followed for the prioritization and evaluation of issues. The inspectors identified two unresolved items during closeout review of a Licensee Event Report on the containment air coolers. One was for the failure to provide adequate basis for a conclusion in the LER regarding the ability of the containment air coolers to support equipment qualification in the emergency core cooling system pump rooms. The second was for the failure to resolve a discrepancy after calculating that lubrication oil in the decay heat removal and high pressure injection pump motors was not acceptable from a temperature standpoint. Finally, the inspectors identified a Non-Cited Violation (Green) for the failure to follow the corrective action procedure and implement remediation requirements following rejection of two apparent cause evaluations.

(1) Assessment of the Magnitude of the Overall Work Order Backlog

The inspectors reviewed the magnitude of the overall backlog and work orders for trends that would be indicative of the licensee's ability to manage the work order backlog.

The inspectors were provided data on the work order backlog and provided the licensee's approved plan to reduce the backlog. The licensee plans to reduce the backlog to a steady state level of 415 open work orders. Based on review of the data, the inspectors determined that the licensee was making slow progress in reducing the backlog. The inspectors did not identify any items of significance. The inspectors noted that:

- C As of the period ending December 5, 2004, the backlog consisted of 3,420 open work orders. This backlog included all work orders, both outage and online. Of the 3,420 work orders, 1099 work orders were classified as outage

and 2321 work orders were classified as online. The work order backlog, along with other backlogs, is tracked every Friday by the licensee. Increases in the backlog were discussed during morning management meetings.

- C As of the period ending August 22, 2004, the backlog consisted of 3821 open work orders. Of these, 2858 were classified as online work orders.
- C The licensee developed a plan for working off the backlog that had existed in February 2004. This backlog had about 3046 work orders. The licensee identified that, as of December 15, 2004, that original package of backlogged work orders had been reduced to approximately 1038 items. The 1038 items did not account for new work orders originated after the start of the reduction effort.

The inspectors determined that the decrease from 2858 online work orders during the week of August 22, 2004 to 2321 online work orders during the week of December 5, 2004 equated to a reduction of 537 work orders over a period of 15 weeks, or about 36 work orders per week. The number of incoming outage work orders increased as would be expected prior to an outage. It would also be expected that outage work orders would decrease during plant outages.

The licensee did not indicate that the present target for steady state work orders differentiated between outage and online work orders. Thus, assuming that outage work orders would, after an outage, be reduced to a small number, and assuming the present reduction of online work orders is maintained, the licensee could reach its steady-state target in approximately 1 year. However, during outages, priority is normally placed on outage work orders and therefore the number of online orders may increase. Additionally, even during an outage, not all work orders classified as outage work orders are worked for various reasons. Some may remain open after outages. The inspectors concluded that, with the present licensee efforts, it will take more than 1 year for the licensee to reach its steady state target for open work orders. The licensee did indicate that they were formulating plans for 2005 to address the work order backlog.

(2) Assessment of the Backlog of Work Orders on the Auxiliary Feedwater System

The inspectors performed a focused review of the backlog of work orders on the auxiliary feedwater system to verify that there were no apparent issues on operability that had not been identified and addressed by the licensee.

The licensee provided a list of open maintenance work orders, as of December 3, 2004, for corrective and elective maintenance on the auxiliary feedwater system. This included work orders on the pumps, turbine, and piping. The inspectors identified 38 work orders associated with physical work to address or correct equipment issues. Of those 38 work orders, 16 represented outage work. The inspectors determined that the classification between outage and online work appeared reasonable. The inspectors did not identify any items of significance.

(3) Assessment of Operability Evaluations

The inspectors reviewed seven Operability Evaluations with an emphasis on how they were performed and how timely they were done. The inspectors also reviewed the procedure for performing Operability Determinations, NG-DB-0018, Revision 5.

The inspectors noted that Procedure NG-DB-0018 provided proper guidance to perform operability evaluations. Operability Evaluations reviewed by the inspectors were performed as required and were timely. Any required hold on Mode changes were correctly implemented and any Mode change hold points were properly observed while operability evaluations were being conducted.

(4) Activities and Effectiveness of Management Alignment and Ownership Meeting

The inspectors attended a Management Alignment and Ownership Meeting on November 30, 2004, during which 48 condition reports were reviewed. The inspectors observed licensee management's categorization with emphasis on changes in condition report category; i.e., Significant Condition Adverse to Quality (SCAQ), Condition Adverse to Quality (CAQ), or Condition Not Adverse to Quality (NCAQ).

Overall, the licensee management team conducted condition report reviews in accordance with the Condition Report Process Procedure NOP-LP-2001. The condition reports reviewed were appropriately discussed and the validation of condition report categorization, and evaluation method, appeared to be appropriate. Prior to the meeting, the inspectors reviewed the condition reports and identified two which involved emergency battery lights that appeared to be improperly categorized as NCAQ condition reports. These were identified by the management team during the meeting and appropriately upgraded to CAQ condition reports.

The inspectors noted some examples of condition reports discussed at the meeting with incorrect or at least inaccurate process and activity codes as defined in Nuclear Operating Business Practice Procedure NOBP-LP-2010, "CREST Trending Codes." These codes are assigned when a condition report is initiated and are used to tie a particular condition report to a process and an activity. Examples of a process code include design basis and changes, and surveillance and performance testing. An activity code further specifies the process code information. Examples of an activity code includes motor operated valve testing, and instrument calibration and maintenance. Causal trend codes are assigned during the condition report investigation and therefore may lag the condition report origination by up to 60 days.

The inspectors identified minor examples of problems with the process and activity code information:

- C Condition Report 04-07268 involved poor housekeeping of the diesel fuel oil tank and fuel oil transfer pump house. This condition report was assigned a process code associated with installation of modification projects. It was also assigned an activity code associated with condition reports that are intended only to

improve or enhance an otherwise satisfactory program or task. The process and activity codes were inappropriate to the topic of poor housekeeping.

- C Condition Report 04-07286 involved failure of instrument air dryers apparently due to faulty measuring and test equipment. It was assigned an activity code associated with "other" (actions not covered by any other activity code). However, it appeared that the activity code associated with measuring and test equipment would have been a more appropriate choice.

The NRC and others have already identified the licensee's trend program as a weakness and the licensee has an action plan developed to improve the trend program which is described in Condition Report 04-04660.

(5) Activities and Effectiveness of Corrective Action Review Board

The inspectors attended a Corrective Action Review Board meeting on December 1, 2004, during which two root causes, an apparent cause, and an effectiveness review were discussed. The inspectors reviewed the condition report packages which contained the material for the Corrective Action Review Board against the guidance contained in Attachment 10, "Condition Report Evaluation Package Quality Attributes," of Procedure NOP-LP-2001, "Condition Report Process."

The following documents were presented during the Corrective Action Review Board:

- C Condition Report 04-06498, DB-SC-03059 Did Not Provide Verification of Heat Trace Circuit 153 above 105 Degrees F.
- C Condition Report 04-06154, Temporary Lift Issue for CCW Pump 1 Uncoupled Run
- C Condition Report 01-1393, Rod Control Panel Auto Transfer to Manual
- C Condition Report 04-06094, RE4598AA Sample Pump Tripped

Except for the root cause evaluation associated with Condition Report 04-06498, the overall quality of the condition reports presented was acceptable and in accordance with the standards in Procedure NOP-LP-2001. The inspectors observed good discussions of condition report attributes by all members. The Corrective Action Review Board chairman controlled the meeting well. Presenters were provided constructive feedback by the Corrective Action Review Board members. The inspectors determined that the Corrective Action Review Board was an effective mechanism to improve the overall quality of condition report evaluations.

Condition Report 04-06498 discussed one of fourteen temperature points that was missed during performance of a Technical Specification surveillance to verify proper boric acid heat tracing temperatures. The Corrective Action Review Board appropriately challenged the presenter regarding inferred new and potential problems described in the root cause evaluation which had no followup discussion. The inspectors were informed

that this was the presenter's first time discussing a condition report in front of the Corrective Action Review Board and was a learning experience for the individual.

Problems with the Condition Report 04-06498 writeup included the following:

- C The root cause investigation revealed that the operator who performed the test did not follow the surveillance test procedure but used a method that had been successful in the past (obtaining data for all temperature points) "that was provided during initial on-the-job training and qualification." However no corrective action was issued to address this finding.

The presenter explained during questioning from the Corrective Action Review Board members that several other operators were questioned and none could corroborate that this non-proceduralized method was provided during initial on-the-job training and qualification. The Corrective Action Review Board directed that the documentation of the condition report be expanded to include this extent of condition review with the other operators.

- C One of the corrective actions was to conduct a Stand-Down with Operations, Maintenance, Plant Engineering, and the Training organizations. The corrective action due date for Operations was January 22, 2005, whereas for the other organizations the due date was March 31, 2005. The March 2005 due date was considered to be untimely. The Corrective Action Review Board directed that the due dates be changed to be consistent with the Operations due dates.

The Corrective Action Review Board had several other comments and approved the condition report with the comments. This one condition report was discussed for over an hour which indicated that the Corrective Action Review Board continues to be needed to ensure quality in root and apparent cause evaluations.

c. Findings

- (1) (Open) Licensee Event Report (LER) 05000346/2002-008-00 & -01, Containment Air Coolers 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 conclusion that the degraded Containment Air Coolers (CACs) supported operability. The inspectors identified two Unresolved Items as a result of this review. These involved inadequate basis for conclusions regarding the ability of the degraded CACs to support equipment qualification in the ECCS pump rooms. This is a past operability question since the licensee completely rebuilt all three of its CACs prior to restart in early 2004.

## Introduction

This LER was issued on December 31, 2002 to report degraded CACs. The principal issues related to structural adequacy and thermal performance. 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.

## Description

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 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.

The inspectors reviewed the "Assessment of the Seismic Adequacy of the Containment Air Coolers", dated December 30, 2002. This evaluation was performed to evaluate structural adequacy due to the corrosion damage identified during containment walkdowns conducted in May of 2002. The evaluation concluded that while significant corrosion was present, the corrosion would not have prevented the CACs from performing during a Safe Shutdown Earthquake (SSE) in combination with other design loads. The inspectors found the evaluation to be reasonable and the conclusions acceptable.

The licensee issued an Operability Evaluation for the CACs on November 23, 2002 to address nozzle stiffness modeling deficiencies identified in CR 02-05563. This CR questioned the low stiffness values assigned to the CAC nozzles within the service water piping design calculations. The low stiffness values resulted in relieving the nozzles of any significant loads. Additionally, the seismic analysis for this piping eliminated the nozzle stiffness entirely. This Operability Evaluation also included an evaluation of all other open Condition Reports that potentially impacted the CACs structural behavior.

Load cases considered for this evaluation included the Safe Shutdown Earthquake (SSE) event, Loss of Offsite Power (LOOP) and Loss of Coolant Accident (LOCA) concurrent with the LOOP event. The evaluation concluded the following:

- C The use of higher, more realistic stiffness values for the CAC nozzles resulted in nozzle loads in excess of typical design values when waterhammer loads were combined with thermal expansion loads. While this represents a degraded condition, the evaluation demonstrated that the CACs remained operable.
- C The previous assumption that nozzle loads due to a seismic event were negligible, was validated through a conservative analysis run that used upper bound nozzle stiffness values.

- C The predicted loss of coolant accident (LOCA) waterhammer loads acting on the CAC supply and return lines were evaluated and conservatively redistributed from the piping anchor to the CAC nozzles. The evaluation demonstrated that the CACs remain operable.
- C The effects of LOCA induced thermal expansion of the service water piping were evaluated and confirmed that the cooling coil deformations would not adversely impact functional operability.

The NRC inspectors reviewed the Operability Evaluation and found the methodology and conclusions acceptable. However, the LER referenced thermal performance evaluation "Assessment of Thermal Performance for the Containment Air Coolers", dated March 21, 2003, which stated that the increase in temperature will result in increased ECCS pump room heat load. The evaluation 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, did not provide adequate 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. This issue will remain an unresolved item pending the licensee providing adequate justification to support this statement in Revision 1 of LER 02-008 (URI 05000346/2004017-02).

FENOC Calculation C-NSA-032.02-006, "ECCS Pump Room Equipment High Temperature Qualification," dated June 11, 2003, 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 decay heat removal and high pressure injection pump motors was not found acceptable for this higher temperature. This issue will remain an unresolved item pending the licensee demonstrating that the degraded CACs did, in fact, support the equipment qualifications in the ECCS pump rooms as stated in Revision 1 of LER 02-008 (URI 05000346/2004017-03).

(2) Rejected Cause Evaluations by the Corrective Action Review Board

The inspectors identified a Green Finding associated with a Non-Cited Violation of 10CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to properly implement Procedure NOP-LP-2001, "Condition Report Process," regarding root and apparent cause evaluations that were rejected by the Corrective Action Review Board.

Introduction

Procedure NOP-LP-2001, step 4.1.1, states that rejection of any cause evaluation by the Corrective Action Review Board requires remediation of the evaluator. The procedure also stated that the Corrective Action Review Board chairman or responsible manager will determine the method of remediation and that the remediation

requirements and its completion are to be documented. These requirements were added in a revision to Procedure NOP-LP-2001 in July 2004.

### Description

The inspectors identified two apparent cause evaluations that were rejected by the Corrective Action Review Board after the July 2004 revision to Procedure NOP-LP-2001 without the required remediation. These were:

- C Condition Report 04-05174, Boron Injection Flowpath Clearance Issues, August 18, 2004
- C Condition Report 04-05087, Missed Procedure Step During Performance of Post Accident Sampling Periodic Test, August 12, 2004

The licensee initiated Condition Report 04-07626 stating that the above condition reports need to be resubmitted to the Corrective Action Review Board to document a decision on remediation. In addition, the licensee initiated Condition Report 04-07451 to address this issue of implementation and documentation of Corrective Action Review Board remediation of apparent and root cause evaluators.

### Analysis

The inspectors determined that the failure to implement the requirement in Procedure NOP-LP-2001 to remediate the evaluators of Condition Reports 04-05174 and 04-05087 to be a performance deficiency. This inspector-identified issue was greater than minor because if left uncorrected the issue would become a more significant safety concern involving the implementation of the corrective action program for significant conditions adverse to quality and conditions adverse to quality. In addition, the inspectors determined that the Reactor Safety Cornerstone and its objectives were affected.

The inspectors determined that the finding was not suitable for SDP evaluation because the failure to remediate the evaluators of Condition Reports 04-05174 and 04-05087 did not directly result in degraded equipment. Therefore, this finding was reviewed by Regional Management, in accordance with IMC 0612 Section 05.04c, and determined to be of very low safety significance. The finding was not greater than very low safety significance because no safety-related equipment was rendered inoperable.

### Enforcement

10 CFR 50, Appendix B, Criterion V, required that activities affecting quality shall be prescribed by documented instructions or procedures of a type appropriate to the circumstances and shall be accomplished in accordance with the instructions or procedures. Procedure NOP-LP-2001, "Condition Report Process," was a quality-related administrative procedure requiring that rejection of any cause evaluation by the Corrective Action Review Board requires remediation of the evaluator and documentation of the remediation requirements and its completion.

Contrary to those requirements, the inspectors identified two apparent cause evaluations that were rejected by the Corrective Action Review Board and the required remediation was not performed. Because the violation was of very low safety significance and the events were entered into the licensee's corrective action program (CR 04-07730), this violation was being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000346/2004017-04).

.3 Effectiveness of Corrective Actions

a. Inspection Scope

The inspectors reviewed corrective action documents and interviewed plant personnel to verify that corrective actions were effective and implemented in a timely manner commensurate with the significance of the issues. The review also encompassed corrective actions developed to address common cause and generic concerns. The inspectors randomly sampled previously completed corrective actions to assure that the corrective actions remained in place as appropriate.

A listing of the specific documents reviewed during the inspection is attached to the report.

b. Assessment

The inspectors concluded that, in general, corrective actions were implemented in a timely manner commensurate with the safety significance of the issues. The inspectors identified a Non-Cited Violation (Green) for failure to adequately and effectively correct degradation of underground cables due to water intrusion.

(1) Assessment of Licensee Preparation for Frazil Ice Conditions

The inspectors reviewed the licensee's implementation of corrective actions for a previously issued NRC Non-Cited Violation (50-346/2004002-03) regarding frazil ice. The licensee documented its investigation on Condition Report 04-00179, Lack of Preparation for Frazil Ice Conditions. The inspectors did not identify any items of significance.

Condition Report 04-00179 documented that the licensee failed to make provisions for and had failed to stage "trash" pumps for the purpose of providing water to the service water intake canal from Lake Erie in the event of frazil ice blockage of the canal intake crib. The inspectors noted that the only corrective action, classified as an "enhancement action," was to provide information to the preventive maintenance coordinator so that the coordinator could arrange for staging of the trash pumps. The licensee defined an enhancement action as "A non-essential improvement opportunity which is not required to either remediate or prevent CAQs or their causes."

The inspectors noted that a requirement to stage the trash pumps existed separately in Procedure DP-OP-06913, "Seasonal Plant Preparation Checklist." However, the licensee did not implement the requirement to stage the pumps during the 2003-2004

winter season. This was the subject of the NRC Violation. The corrective action in Condition Report 04-00179 was closed on March 20, 2004, citing that a preventive maintenance revision request had been submitted on March 19, 2004. The inspectors verified that the request to stage the trash pumps had been submitted as documented.

The inspectors verified that, for the 2004-2005 winter season, the trash pumps were staged and that the licensee has a purchase order (PO) for a contractor to respond, with a 4-hour notification, to dig the required ditch for the pumps and to get the pumps into operation. The PO also charged the contractor with getting any required beach digging permits.

Additionally, the inspectors verified that the trash pump capacity, as cited in the vendor literature, was sufficient to meet the capacity requirements specified in Procedure DP-OP-06913. The inspectors concluded that, although the preventive maintenance request had not been processed in a timely manner sufficient to preclude a recurrence of missing a requirement for arranging for and staging the pumps for addressing frazil ice conditions, licensee personnel, using existing procedural guidance, did notify Maintenance Services Personnel in sufficient time to permit staging of a trash pump prior to conditions conducive to frazil ice formation.

(2) Review of Condition Reports for Inadequate or Ineffective Actions

The inspectors reviewed a list of 136 condition reports that were written by the licensee to capture inadequate or ineffective actions within condition reports. The inspectors sampled six of those condition reports and reviewed actions taken for the conditions noted. The inspectors did not identify any items of significance.

c. Findings

Effectiveness of Corrective Actions for Conditions Adverse to Quality for Underground Cables

Introduction

The inspectors identified a Green finding associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to assure that adequate and timely actions were promptly identified and implemented to address several underground wetted cable issues, a condition adverse to quality.

Description

The inspectors noted that the repeated recurrence (an adverse trend) of underground cable failures did not receive appropriate attention from licensee management to review the adequacy of corrective actions in preventing underground cable failures and the evaluation of more recent condition reports at a higher significance level.

The inspectors also discussed the underground cable failures with the licensee's systems and design engineers and noted that a general weakness existed in the

effectiveness of corrective actions previously implemented in preventing repeated recurrence of underground cable failures. General corrective action program weaknesses were also documented in earlier condition reports (CRs) (e.g., CR 02-02419, untimely corrective actions to address corrective action program weaknesses).

The inspectors reviewed the following CRs related to the licensee's Underground wetted cable issues:

- CR 1999 - 1648. This condition report was written in October 1999, when the Component Cooling Water (CCW) pump # 2 tripped due to a cable fault caused by prolonged exposure to water. The root cause evaluation performed for this CR recommended replacing feed cables to all three CCW pumps and establishing preventive maintenance (PM) activities for periodic testing of feed cables to Service Water (SW), Make-Up (MU), CCW, High Pressure Injection (HPI), and Decay Heat (DH) pumps using Doble Power Factor tests and Partial Discharge tests. Based on the above recommendations, feed cables to all three CCW pumps were replaced and testing of feed cables to MU pumps were completed during cycle 12 refueling outage (12RFO) using Doble Power Factor testing with satisfactory results. Testing of SW pump cables were scheduled for 13RFO. No other pump feed cables were tested.
- CR 01-2532 - This condition report was written in September 2001 and documented that the SW pump cables were not being tested as scheduled due to the lack of new cables and questioned the ineffective and destructive nature of the cable testing recommended by CR 1999-1648. The apparent cause evaluation performed for this CR identified the limitations of utilizing Doble Power Factor Test for trending purposes and recommended the termination of cable testing PMs (recommended by CR 1999-1648) for the above mentioned cables, and instead revised the PMs to replace the cables based on the design life of the cables, 40 years, without any assessment of the physical condition of the subject cables.
- CR 02-01869 - This condition report was written in May 2002 and questioned the acceptability of water in a conduit containing power cables for Auxiliary Feedwater components. A PM existed to clean a weep hole drilled in this conduit, which is used to drain the water in the conduit to a floor drain. The apparent cause evaluation performed for this CR determined that the ground water intrusion into this conduit could not be resolved due to the inaccessibility of the conduit. As part of corrective actions to this CR, an independent engineering study was conducted by a private engineering consultant (Advent Engineering Services, Inc), which recommended in November 2002 to replace and reroute the cables in the subject conduit by the end of 2005. Corrective action # 3 of this CR (which is still open, due date March 31, 2005) is to solicit members for a team to review the recommendations of the engineering study and develop a plan to address the issue.

- CR 02-05000 - This CR written in August 2002 expressed concerns with not having a documented testing program for medium voltage cables. The apparent cause evaluation performed for this CR recommended for "Life Cycle Management" personnel to evaluate cable health. The Life Cycle Management responded by stating that, license renewal application will, from a fleet perspective, commit to the electrical programs for aging management of various types of cables identified in NUREG-1801. The response further stated that "currently a cable/cable monitoring program has yet to be established but is expected by late 2005".
- CR 02-08474- This CR written in October 2002 identified low insulation resistance for the feed cable to make-up pump # 1 during post maintenance testing. As part of the corrective actions, the feed cable to this pump was replaced. The extent of condition review identified that this condition appeared to be related to all medium voltage cables and corrective action # 2 of CR 02-05000 will address this issue. Testing of other make-up pump feed cables were not conducted.
- CR 02-10202 - This condition report was written in December 2002 and documented that while replacing the feed cables to make-up pump # 1, water was found in the conduit and the apparent cause evaluation determined that water intrusion due to mechanical degradation of the conduit was the likely cause of cable insulation degradation. Corrective action (CA) # 6 was initiated to expand the scope of CA # 3 of CR 02-01869 by including medium voltage cables and to assess the adequacy of the cable replacement program developed under CR 01-2532, with a due date of August 31, 2005.
- CR 03-01156 - This condition report was written in February 2003 in response to NRC Information Notice 2002-12, "Submerged Safety-Related Electrical Cables". During the resolution of this CR, the licensee identified that cable submergence/wetting as a contributing factor of several cases of cable degradation. In closing this CR, the licensee stated that no further actions were necessary as previously written CRs 02-10202, 01-2532 and 02-01869 were addressing the issue of submerged/wetted cables at Davis-Besse. However, all of the above mentioned CRs have open action items yet to be closed.
- CR 04-02575 - This condition report was written in April 2004 when an underground feed cable associated with a 13.8 kV breaker (HAAE4) faulted resulting in the loss of circulating water pump # 1 and two non-safety-related 4 kV substations E4 & E6. Corrective actions for this CR included replacement of the faulted cable and installation of partial discharge monitoring instrumentation for all four circulating water pumps. Troubleshooting performed for this event identified that all 3 phases of the faulted cable showed signs of degradation similar to that observed in other cables that had been wet. The cause analysis performed for this CR reviewed all previously reported CRs regarding cable failures and concluded that insulation breakdown was the cause of this event also. Inadequate implementation of corrective actions and ineffective corrective actions for previously identified problems were identified as contributing causes. Yet, no corrective action was initiated to review the

adequacy or to expedite the implementation of corrective actions for the previously identified wetted underground cable issues.

The inspectors also reviewed additional condition reports, not listed above, such as PCAQR 95-0055, water dripping from conduit in the AFW pump room; CR 99-1149, failure of Beach Feeder Cable; CR 01-0489, damaged splice in manhole, identified as being underwater; CR 01-2704, TPCW # 1 feeder cable failure; CR 02-08545, review of actions not taken for a cable health monitoring program; CR 02-08694, failure of the Aux Boiler Forced Draft Fan Cable; CR 03-05885, Degradation of the AFW Room Fan # 1 feed cable. The inspectors determined that all the condition reports reviewed concerning the underground cable degradation issues since October 1999 were assigned the appropriate significance level.

### Analysis

The inspectors determined that the failure of previous licensee corrective actions to adequately address underground cable failures was a licensee performance deficiency. This inspector-identified issue was greater than minor because if left uncorrected, the issue could become a more significant safety concern. In addition, the inspectors concluded that the failure to implement effective corrective actions in a timely manner to address underground cable degradation issues potentially affected the performance capability of safety-related components and thus affected the mitigating systems attributes of equipment performance reliability. Finally, the issue affected the mitigating systems cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences.

The inspectors evaluated the finding using Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening. The inspectors determined that the finding (1) did not result in a design or qualification deficiency that resulted in a loss of function per NRC Generic Letter 91-18; (2) did not represent an actual loss of safety function; (3) did not result in a loss of safety function of a single train for greater than the Technical Specification allowed outage time; (4) did not represent an actual loss of safety function of one or more non-Technical Specification trains designated as risk significant per the Maintenance Rule for greater than 24 hours; and (5) did not screen as potentially risk significant due to seismic, fire, flooding, or severe weather initiating events. Therefore, the inspectors determined the finding to be of very low safety significance (Green).

### Enforcement

10 CFR 50, Appendix B, Criterion XVI requires, in part that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, and nonconformance are promptly identified and corrected. Contrary to this requirement, the licensee failed to adequately and effectively correct degradation of underground cables, as evidenced by the trend of condition reports associated with underground cable failures. Previous corrective actions did not prevent recurring failures. Although, preventive maintenance activities (PMs) had been initiated to test underground cables, PMs were not scheduled to be completed until 2008. The

inspectors determined this finding was a violation of 10 CFR Part 50, Appendix B, Criterion XVI. Because this violation was of very low safety significance (Green), and was documented in the licensee's corrective action program as CR 04-07843, "NRC PI&R Inspection - Corrective Actions Adequacy for Underground Wetted Cables", this finding is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy. There is a current concern in that, due to lack of testing, the actual condition of some underground cables cannot be conclusively determined. (NCV 05000346/2004017-05)

.4 Effectiveness of Nuclear Quality Assurance Audits and Self-Assessments

a. Inspection Scope

The inspectors reviewed the quarterly Nuclear Quality Assurance Audit Reports beginning with the 4<sup>th</sup> quarter of 2003. In addition, the inspectors reviewed Self-Assessment Report 2004-0103 of the corrective action program performed in August 2004.

A listing of the specific documents reviewed during the inspection is attached to the report.

b. Assessment

The inspectors determined that the licensee's audits and assessments of the corrective action program were of appropriate depth and scope, and findings and recommendations were appropriately captured. The licensee's audits and self-assessments were consistent with the inspection team's results.

(1) Nuclear Quality Assurance Audit and Self-Assessment Reports

The inspectors reviewed the quarterly Nuclear Quality Assurance Audit Reports beginning with the 4<sup>th</sup> quarter of 2003. In general, the Nuclear Quality Assurance reports were in-depth, provided bases and supporting details for conclusions, and appropriately referenced conditions reports. The latest Nuclear Quality Assurance reports was issued on November 10, 2004, and rated the corrective action evaluation area "Yellow," indicating that this area is challenged and may become ineffective. This assessment by the Nuclear Quality Assurance organization is consistent with that of the NRC and other organizations that have reviewed Davis-Besse's corrective action program.

(2) Self-Assessment Reports

The inspectors also reviewed Self-Assessment Report 2004-0103 self assessment report of the corrective action program performed in August 2004. The report documented a thorough assessment and contained important observations and conclusions. Condition Reports were initiated as appropriate to address negative observations.

c. Findings

No findings of significance were identified.

.4 Evaluation of the Independent Corrective Action Program Assessment Report

a. Inspection Scope

As part of its 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, the inspectors reviewed the "Submittal of Independent Assessment Report of Corrective Action Program Implementation for the Davis-Besse Nuclear Power Station" report. The inspectors reviewed the report to ensure that the report provided an overall assessment of the corrective action program, that the independent assessor's activities supported the conclusions, and that the licensee documented specific action plans to address deficiencies that were documented in the report.

The inspectors previously reviewed the licensee's assessment plans and documented this review in IR 04-12. The inspectors verified that the assessment team members were independent from Davis-Besse and that the team members had appropriate credentials and experience. The assessment plan was revised once to include quantitative requirements in the assessment scope and to extend the assessment from 1 to 3 weeks based on NRC review of the submitted plan.

Assessment

During the time period that the assessment team was onsite, the inspectors were able to observe the assessment activities in process. The NRC's review of the in-process assessment found that the assessment was conducted in accordance with the assessment plan. In addition, findings and observations presented at the exit meeting thoroughly represented the in-process assessment results.

On October 1, 2004, the independent team completed its assessment. The final assessment report was issued on November 15, 2004, and concluded that the implementation of the Davis-Besse corrective action program was overall marginal. An unsatisfactory rating was assigned to the "effectiveness of program trending" area. Weaknesses in trending had been previously identified by the NRC and others and the licensee had developed corrective actions to address this area. The inspectors reviewed the licensee plans to address the trending program weaknesses during this current inspection and concluded that some improvement has already occurred. The licensee needs to maintain its efforts in order to attain lasting improvement in this area.

The inspectors had the following additional observations:

- C The inspectors questioned the licensee regarding the due dates for Commitment AFI COIA-CAP-04-04. Commitment No. 2 discussed enhancing the quarterly trend report to place more emphasis on active condition report trends. This commitment was assigned a due date of December 20, 2004. However,

Commitment No. 1 discussed benchmarking of other sites to evaluate how they perform trending and was assigned a due date of January 30, 2005. The inspectors questioned the licensee why enhancing the quarterly trend report was due before benchmarking, as it seemed the due dates for these two commitments should be reversed.

The licensee showed the inspectors evidence that benchmarking at several sites had already been performed. In late 2003 an industry peer self assessment was performed which recommended benchmarking be performed to improve trending. The site performance improvement group obtained information from several utilities to improve trending. Subsequently, the responsibility for the trend report was transferred to the FENOC corporate organization. The benchmarking due date of January 30, 2005, was selected to allow corporate to complete the formal benchmarking process. Davis-Besse used the information it had obtained and incorporated the information into the 3Q2004 Trend Summary Report (see Section 4OA2.1 of this report).

- C The inspectors reviewed the licensee's actions to address commitments that were due at the time of this current problem and identification inspection. Of note, under AFI-COIA-CAP-04-03, was Commitment No. 1. This commitment was to review the backlog of preventive and remedial corrective actions for root and apparent cause evaluations to consider if interim corrective actions are required or if an accelerated completion date is appropriate. The actions under this commitment were due on November 30, 2004. The licensee stated that the review was completed but the licensee had no documented evidence to show this to be the case. The licensee extended the due date until December 17, 2004, to allow for documentation of the review and initiation of interim actions and/or changes to corrective action due dates.

The inspectors concluded that, overall, the independent assessment activities were of sufficient depth and scope and were adequately documented. Areas for Improvement developed by the licensee to address corrective action program deficiencies were captured in condition reports and were generally timely. Enhancements or good practices that were developed to address observations in the independent assessment report were termed "Noteworthy Items" and were also captured in condition reports as warranted. The inspectors determined that the licensee complied with the requirements of the March 8, 2004, Confirmatory Order for this independent assessment of the corrective action program area.

c. Findings

No findings of significance were identified.

.5 Effectiveness of Post-Outage Commitment Implementation

a. Inspection Scope

The inspectors reviewed a sample of commitments from Revision 6 of the Davis-Besse Nuclear Power Station Operating Cycle 14 Improvement Plan. The licensee's corrective

action commitments described in this Improvement Plan were intended to improve effectiveness and implementation of the corrective action program.

### Assessment

The licensee considers the commitments discussed below to be closed. The inspectors' review of the closed commitments discussed below determined that, overall, the Operating Cycle 14 commitments reviewed during this inspection had been properly implemented.

(1) Initiative 9.1.a, Strengthen Procedural Requirements for Apparent Cause Evaluations, Including Analytical Methods to Be Used

The licensee accomplished a number of actions to address this initiative. For example:

- C Generic Implication Reviews (Experience Review and Extent of Conditions) are now procedurally required for apparent cause evaluations.
- C Condition report analysts were added to the evaluation review process.
- C The Performance Improvement Organization is a peer check to ensure that apparent cause evaluations are forwarded to the Corrective Action Review Board. In addition, the inspectors noted that the Corrective Action Review Board plans to continue to review all operations-related apparent cause evaluations through at least November 2005.
- C Apparent cause analysis guidance has been added to Procedure NOP-LP-2001, "Condition Report Process ."
- C More evaluation guidance has been added to Procedure NOP-LP-2001 involving installed plant equipment.

The inspectors determined that the licensee met its initiative.

(2) Initiative 9.1.b, Corrective Action Review Board Review of Apparent Cause Evaluations until Standards Are Consistently Met

The licensee determined that a 90 percent acceptance rate by the Corrective Action Review Board defined a consistent standard. The Corrective Action Review Board has been reviewing apparent cause evaluations by comparing them against evaluation criteria (Form NOBP-LP-2008-01, Condition Report Review Summary) to assess the quality of the evaluations. As of September 7, 2004, 55 apparent cause evaluations were completed in 2004 with three evaluations rejected by the Corrective Action Review Board. This equates to a 94 percent acceptance rate, which is above the licensee's 90 percent acceptance rate goal.

The inspectors reviewed the data and observed Corrective Action Review Board activities as discussed in earlier sections of this report. Based on the licensee's actions and the inspectors' review, the inspectors determined that the licensee met its initiative.

(3) Initiative 9.1.c, Identify Apparent Cause Evaluators

The inspectors reviewed a list of apparent cause evaluators and condition report analysts that have been trained or are to be trained in performing apparent cause evaluations. The list includes individuals from the Performance Improvement Group, Operations, Security, Design Basis Engineering, Maintenance, Plant Engineering, Chemistry, Radiation Protection, and several other organizations.

The inspectors determined that the licensee met its initiative.

(4) Initiative 9.1.d, Develop Training Program and Expectations and Provide Training to Apparent Cause Evaluators

The licensee demonstrated that ninety-three individuals completed the full Apparent Cause Evaluator training course during 2003 through the 1<sup>st</sup> quarter of 2004. The course consisted of five modules: FEN-CAP-1001, Condition Report Data Gathering Skills, FEN-CAP-1002, Condition Report Interviewing Skills, FEN-CAP-1003, Condition Report Evaluation Methodology Skills, FEN-CAP-1004, Corrective Action Development Skills, and FEN-CAP-1005, Condition Report Trend Coding Skills. These five modules were developed and approved using a systematic approach to training and are based on a job and task analysis. In order to qualify as an Apparent Cause Evaluator, the ninety three individuals, were also provided the Apparent Cause Evaluator Job Familiarization Guide, FEN-CAP-2001.

The inspectors determined that the licensee met its initiative.

(5) Initiative 9.1.e, Qualify the Trained Apparent Cause Evaluators Using the Systematic Approach to Training

The intent of this initiative is to have those individuals that perform Apparent Cause Evaluations be qualified. In order to be qualified the individual must complete the Apparent Cause Evaluator Job Familiarization Guide, FEN-CAP-2001. Only individuals who have completed this FEN-CAP-2001 were authorized to perform Apparent Cause Evaluations independently. The inspectors verified that a sufficient number of individuals had completed FEN-CAP-2001 and were qualified to perform apparent cause evaluations.

The inspectors determined that the licensee met its initiative.

(6) Initiative 9.1.f, on an Interim Basis, Rotate Team of Apparent Cause Evaluators to Support Services

The licensee had representatives from Operations, Maintenance, Radiation Protection, Design Basis Engineering, and Plant Engineering make up the team of apparent cause evaluators reporting to the Director of Support Services, on an interim basis. The representatives worked on 2004 condition reports requiring apparent cause evaluations on January 12, 2004. Team members completed apparent cause training prior to commencing this rotational assignment.

The inspectors determined that the licensee met its initiative.

- (7) Initiative 9.2, Establish the appropriate level of workload for Condition Report Evaluations and Corrective Actions and develop a plan to reduce the backlogs to those levels

The appropriate level of workload for condition reports and corrective actions has been established. Performance Indicator D-FEE-O1, Corrective Action Program, includes a timeliness component which establishes the goal of less than 25 percent backlog. The backlog indicator is defined as the sum of open condition report evaluations and open non-outage corrective actions divided by the total number of condition reports initiated within the last year.

The condition reports referenced in the performance indicator refer to those classified as conditions adverse to quality and significant conditions adverse to quality. The corrective actions referenced in the performance indicator refer to preventive, remedial, and compensatory measures.

According to the October 2004 performance indicator report, the long-term goal of 250 or less open condition report evaluations and 2000 or less open corrective actions (classified as conditions adverse to quality) has been established. The October 2004 report showed 378 open condition report evaluations and 3675 open corrective actions; however, the data revealed a decreasing trend over time toward meeting these goals.

The organizations with the largest percentage of open condition report evaluations is Engineering. Also, the engineering and outage management/work control organizations have a large percentage of the open corrective actions. Both Engineering and Outage Management/Work Control have backlog reduction plans. The licensee is routinely monitoring and discussing the backlog.

The inspectors determined that the licensee met its initiative.

- (8) Initiative 9.3, Perform a Focused Self-assessment of Implementation of the Corrective Action Program Using Industry Peers.

Self-Assessment Report 2004-0103 of the corrective action program was performed in August 2004. The assessment was conducted using industry peers. The assessment was performed from August 9 to 20, 2004, and the report was issued on September 20, 2004. The inspectors reviewed this report.

The inspectors determined that the licensee met its initiative.

- (9) Initiative 9.4, Reestablish the Corrective Action Program Trending Process

Based on the discussion in Section 4OA2.1 of this report, the inspectors determined that the licensee met its initiative.

40A6 Exit Meeting

The inspectors presented the inspection results to R. Schrauder and other members of licensee management in an exit meeting on December 16, 2004. Licensee management acknowledged the findings presented and indicated that no proprietary information was provided to the inspectors.

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee Personnel

B. Allen, Plant Manager, Davis-Besse  
M. Bezilla, Site Vice President  
B. Boles, Manager, Plant Engineering  
J. Grabnar, Manager, Design Engineering  
L. Harder, Manager, Radiation Protection  
R. Hovland, Manager, Technical Services  
R. Hruby, Manager, Nuclear Oversight  
D. Kline, Manager, Security  
S. Loehlein, Director, Station Engineering  
D. Noble, Radiation Protection Supervisor  
K. Ostrowski, Manager, Plant Operations  
M. Parker, Supervisor, Plant Engineering  
C. Price, Manager, Regulatory Compliance  
R. Schrauder, Director, Performance Improvement  
M. Stevens, Manager, Maintenance  
M. Trump, Manager, Training  
D. Wahlers, Supervisor, Nuclear Quality Assurance  
D. Wuokko, Supervisor, Compliance

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

#### Opened

05000346/2004017-01	NCV	Failure to Initiate a Condition Report for Conditions Adverse to Quality in the Auxiliary Feedwater System
05000346/2004017-02	URI	Failure to provide adequate basis for the conclusion stated in Revision 1 of LER 05000346/2002-008-00 & -01 regarding the ability of the CACs to support equipment qualification in the ECCS pump rooms.
05000346/2004017-03	URI	Failure to resolve discrepancy following conclusion from Calculation C-NSA-032.02-006, "ECCS Pump Room Equipment High Temperature Qualification," that post-accident lubrication oil temperature in the decay heat removal and high pressure injection pump motors was not found acceptable.
05000346/2004017-04	NCV	Failure to follow the corrective action procedure and implement remediation requirements following rejection of two apparent cause evaluations.

05000346/2004017-05    NCV    Failure to adequately and effectively correct degradation of underground cables due to water intrusion.

Closed

05000346/2004017-01    NCV    Failure to Initiate a Condition Report for Conditions Adverse to Quality in the Auxiliary Feedwater System

05000346/2004017-04    NCV    Failure to follow the corrective action procedure and implement remediation requirements following rejection of two apparent cause evaluations.

05000346/2004017-05    NCV    Failure to adequately and effectively correct degradation of underground cables due to water intrusion.

Discussed

LER  
05000346/2002-008-00  
& -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.

### PROCEDURES AND ADMINISTRATIVE DOCUMENTS

DBBP-PES-001; System and Component Trending, Revision 0  
DBBP-PI-2000; Condition Report Process Expectations, Revision 4  
DBBP-VP-0009; Management Plan for Confirmatory Order Independent Inspection, Revision 1  
NG-NA-0305; Operating Experience Assessment Program, Revision 6  
NG-NA-00711; Quality Trending, Revision 5  
NOBP-LP-2001; FENOC Focused Self-Assessments, Revision 3  
NOBP-LP-2004; FENOC Ongoing Self-Assessments, Revision 2  
NOBP-LP-2006; Collective Significance Review, Revision 1  
NOBP-LP-2007; Condition Report Process Effectiveness Review, Revision 2  
NOBP-LP-2008; Corrective Action Review Board, Revision 3  
NOBP-LP-2010; CREST Trend Codes, Revision 1  
NOBP-LP-2011; FENOC Root Cause Analysis Reference Guide, Revision 1  
NOBP-LP-2016; FENOC Generic Implications, Revision 0  
NOP-ER-1001; Continuous Equipment Performance Improvement, Revision 0  
NOP-ER-3001; Problem Solving and Decision Making, Revision 0  
NOP-LP-2001; Condition Report Process, Revision 7  
NOP-LP-2004; Internal Assessment Process, Revision 2  
DB-PF-05064; Electrical Machine Testing using PDMA Tester, Revision 3  
NOP-WM-1003; Work identification process (Notification), Revision 0  
NOP-WM-3001; Work Management PM Process, Revision 3  
DB-OP-02000; Emergency Procedure - RPS, SFAS, SFRCS Trip, or SG Tube Rupture, Revision 13  
NG-DB-0018; Operability Determinations, Revision 5  
DB-SP-03161; AFW Train 2 Level Control, Interlock, and Flow Transmitter, Revision 12  
DB-OP-06016; Containment Air Cooling System Procedure, Revision 18  
NOP-CC-2003; Engineering Changes, Revision 3  
NOP-CC-2001; Design Verification, Revision 1  
NOP-CC-2003-18; Owner Acceptance Review, Revision 1  
DB-OP-06316; Diesel Generation Operating Procedure, Revision 14  
NOPL-SS-3202; Delegation of Authority, Revision 0

### EFFECTIVENESS OF PROBLEM IDENTIFICATION

#### Trending Program:

CR 04-04660, Evaluation of Corrective Action Program and Trends  
Corrective Action Program Performance Indicators, October 2004

Operating Experience:

CR 04-04624; OE 18621, Orientation of ASCO NP-1 Series Solenoid Valves; July 19, 2004  
CR 04-04850; 2004OE 18784, Check Valve Degradation; July 30, 2004  
CR 04-05024; WANO SOER 04-1, Managing Core Design Changes; August 9, 2004  
CR 04-01221; SEN 246 – Emergency Diesel Generator Engine Failure; February 12, 2004  
CR 03-06354; OE 16543 Ball Valve Tagged in the Wrong Position; August 7, 2003  
CR 04-02540; SER 2-04 Fuel Handling Events; April 19, 2004  
CR 03-00809; SEN 236 – Condenser Tube Rupture Resulting in Chem. Excursion and Extended S/D; March 18, 2003  
NG-NA-00305; Operating Experience Assessment Program; Revision 06  
Operating Experience Assessment Program, Self-Assessment Report, Approved  
October 3, 2002

Failed Surveillance Tests:

Failed Test Listing Sorted by Procedure Number; December 3, 2004  
CR 04-01498; AF63 Check Valve Failed Its Reverse Flow Test; February 25, 2004  
CR 04-00940; AFP Turbine K3-2 RPM Above Low Speed Stop Setting During Quarterly Test, February 3, 2004  
CR 04-03605; DB-MI-03116 Failed Test; May 26, 2004  
CR 04-02079; DW6831A Stroke Time Out of Expected Range; March 21, 2004  
CR 04-04202; CAC2 Failed to Start; June 25, 2004  
CR 04-06062; DB-MI-03211 Failed Test; September 28, 2004

Auxiliary Feedwater System Condition Reports and Work Orders:

CR 04-00839; Auxiliary Feedwater Effectiveness Review Recommendations; February 1, 2004  
CR 04-04577; AFPT #1 Exhibited Hunting at Low Speed Stop; July 16, 2004  
CR 04-04747; AFW Train 2 Flow Indicators Exceed the Allowable Tolerance; July 26, 2004  
CR 04-01017; RRATI: MS5889B – Slip and Step During Last Half of Stroke; February 5, 2004  
CR 04-01498; AF63 Check Valve Failed Its Reverse Flow Test; February 25, 2004  
CR 04-00194; AFW Turbine K3-1 Casing Leak; January 7, 2004  
CR 04-00737; AFPT 1 Casing Leak; January 29, 2004  
CR 04-06512; OE18389 – Potential Enhancement to Incorporate AFW Governor Periodic Inspection; October 22, 2004  
CR 04-02767; AF6451 Stroked Outside the Expected Range but Not Retested or Made Inoperable; April 19, 2004  
CR 04-02405; 10CFR Part 21, AFW Trip Throttle Valves; March 31, 2004  
CR 04-02616; #2 AFPT Speed Oscillates 900-1100 RPM on Low Speed Stop; April 9, 2004  
CR 04-02620; Oil Leak on #2 Aux. Feedwater Pump Governor; April 10, 2004  
CR 04-00847; PCR: DB-MM-09098, AFW Turbine Governor; February 1, 2004  
CR 04-02832; Potentially Inadequate Resolution of a Part 21 Notification; April 21, 2004  
CR 04-00939; AFW Turbine K3-2 Casing Leak; February 3, 2004  
CR 04-00830; AFP 1 Response Time Exceeds Acceptance Criteria During DB-SP-03157; January 31, 2004  
CR 04-00126; Potential Inadequate T.S. Surveillance Testing of AFW 2 Steam pressure Interlock; January 6, 2004

CR 04-07730; NRC PI&R-Programmatic Concern WOs Correcting Equip Problems with No CR Written; December 17, 2004  
CR 04-07508; NRC PI&R Inspection - MS131 Order; December 7, 2004  
CR 04-07507; NRC PI&R Inspection - ST1320in Packing Leak; December 7, 2004  
CR 04-06028; COIA - CAP - 2004 - Condition Report Initiation Standards Not Met  
CR 04-00847; PCR: DB-MM-09098; AFW Turbine Governor; February 1, 2004  
CR 04-02616; #2 AFPT Speed Oscillates 900-1100 RPM on Low Speed Stop; April 9, 2004  
CR 04-00105; AFW Turbine Governor; January 5, 2003  
CR 04-00194; AFW Turbine K3-1 Casing Leak; January 7, 2004  
CR 04-00737; AFPT 1 Casing Leak; January 29, 2004  
CR 04-00939; AFW Turbine K3-2 Casing Leak; February 3, 2004  
Chronological List of Aux Feedwater CRs Initiated Since January, 2004

*Work Orders:*

SAP Order 200085096; MS30B: Replace Valve  
SAP Order 200093214; Inspect DB-ICS38C, AFPT 1 TIV  
SAP Order 200096024; Calibrate/Calibration Check PSL4930B/X2  
SAP Order 200084608; ST132IN – Repack Valve  
SAP Order 20115290; MS131 – Replace Valve  
SAP Order 200107022; MS738 – Stroke, Position Closed  
SAP Order 200068378; E194-1 AFPT Governor Oil Cooler 1-1  
SAP Order 200124233; Oil Leakage from AFW Pump #1 1B Bearing

PRIORITIZATION AND EVALUATION OF ISSUES

Work Order Backlog Assessment:

Davis-Besse Backlog Reduction Plan; Approved May 1, 2004  
Davis-Besse Backlog Procedure Backlog Reduction, October 22, 2004

Operability Evaluations:

03-021 Rev 1, Evaluates the effect of a water hammer within the CAC system caused by refill of the Service Water following an LOOP, December 10, 2003  
04-007 - CR 04-01711; Concern with Respect to the Accident Analysis Bases That Support High Pressure Injection (HPI) Throttling Curve, March 6, 2004  
04-012- CR 04-0276; AF6451 was not immediately tested or declared inoperable as required, April 20, 2004  
04-022 - CR 04-04891; The Containment Air Coolers and Associated SW Piping May Experience Water Hammer Due to Excessive Fill Rates, August 5, 2004  
04-002 - CR 04-00549; Possible Lack of Proper Electrical Isolation on Radiation Monitors,  
04-004 - CR 04-01050; HPI minimum recirculation flow documentation, February 6, 2004  
04-005 - CR 04-01214; EDG transient analysis during loss of offsite power, February 12, 2004

Management Alignment and Ownership Meeting:

Package for November 30, 2004, Management Alignment and Ownership Meeting

Corrective Action Review Board Meeting:

Package for December 1, 2004, Meeting

Containment Air Coolers:

LER 05000346/2002-008-00 & -01, Containment Air Coolers Collective Significance of Degraded Conditions  
Assessment of the Seismic Adequacy of the Containment Air Coolers, December 6, 2002  
Operability Evaluation for the CACs, November 23, 2002  
Assessment of Thermal Performance for the Containment Air Coolers, March 21, 2003  
Calculation C-NSA-032.02-006, ECCS Pump Room Equipment High Temperature Qualification, June 11, 2003  
CR 03-08065; Mode 3A System Leakage Test: RC14B Body to Bonnet Seal Weld Steam Leak, September 24, 2003  
CR 03-08264; Missed VY-2 Inspection Finding (RC14B) - Trending, September 24, 2003  
CR 03-08399; PES to Perform Analysis of Boric Acid Results, October 1, 2003  
CR 03-08300; Missed VT-2 Inspection Finding, September 23, 2003  
CR 03-08203; Items found by NRC Inspector During RCS Leakage Test, September 26, 2003  
CR 03-08026; SG 1 Steam Line Drain, September 23, 2003

Rejected Cause Evaluations by the Corrective Action Review Board:

CR 04-05174; Boron Injection Flowpath Clearance Issues, August 18, 2004  
CR 04-05087; Missed Procedure Step during performance of post-accident sampling periodic test, August 12, 2004

EFFECTIVENESS OF CORRECTIVE ACTIONS

Review of Condition Reports for Inadequate or Ineffective Action:

Inadequate or Effective Corrective Action Condition Reports since Nov 2003;  
November 18, 2004  
CR 04-00916; Concerns Identified with CR 04-00181 Documentation and Action Recommendations; February 3, 2004  
CR 04-01773; Inadequately Voided SAP Orders; March 8, 2004  
CR 04-01673; Inaccurate/Incomplete Evaluations of CR 03-09011; March 3, 2004  
CR 04-00916; Concerns Identified with CR 04-00181 Documentation and Action Recommendations; February 3, 2004  
CR 04-02832; Potentially Inadequate Resolution of a Part 21 Notification; April 21, 2004  
CR 04-03378; Ineffective Implementation of a Corrective Action; May 18, 2004  
CR 04-05806; DBOV Rejection: CA 01-2526-1 Not Implemented as Required; September 22, 2004

Frazil Ice:

CR 04-00179; Lack of Preparation for Frazil ice Conditions; January 6, 2004  
DP-OP-06913; Seasonal Plant Preparation Checklist; Revision 09

SAP Order 200133642; PM 6490 Frazzle Ice Equipment Placement  
DB-REV-0049; PM Revision Request for Equipment for Frazil Ice; January 21, 2004

Underground Cables and Other Electrical Condition Reports:

CR 04-02575; Breakers HA08 and HAAE4 Tripped, April 7, 2004  
CR 04-03118; Degraded Circ Water Pump 2-2 Motor, May 3, 2004  
CR 02-05000; SHRR-testing Review for 4.16 kV System, August 26, 2002  
CR 02-10202; Foreign Material and Water in Makeup Pump Motor MP37-1A Conduit,  
December 11, 2002  
CR 02-08545; SHRR - Closed CR Review for 13.8 kV Cables in Water, October 23, 2002  
CR 02-01869; Acceptability of Weephole in Conduit for Aux Feed Cables, May 6, 2002  
CR 03-02209; Dull Knocking Sounds Coming from Inside HBBD Cubicle 13, March 20, 2003  
CR 01-2532; Testing of Service Water Pump Cables, Dated September 26,, 2001  
CR 02-08474; Low Insulation Resistance for MU Pump Motor Feed Cable, October 22, 2002  
CR 04-01443; Breaker HAAE4 Failed to Close from the Control Room, February 23, 2004  
CR 02-02419; Untimely Corrective Actions to Address Corrective Action Program Weaknesses,  
June 4, 2002  
CR 03-08556; Timeliness Issue Communicating past Operability of SFAS, October 7, 2003  
CR 03-02725; New Style SFAS Output Relay Potential Design Deficiency, April 7, 2003  
CR 03-03232; Inadequate Approval of Replacement SFAS Output Relays: Deutsch 4CP36AF,  
April 25, 2003  
CR 03-05402; Five Generation 3 (G3) Relays Found Installed in SFAS Prior to 13RFO,  
July 8, 2003  
CR 04-00549; Possible Lack of Proper Electrical Isolation on Radiation Monitors  
CR 04-01050; HPI Minimum Recirculation Flow Documentation, February 6, 2004  
CR 03-00949; EDG 1-1 Performance Does Not Meet USAR Requirements, February 4, 2003  
CR 04-01214; EDG Transient Analysis During Loss of Offsite Power, February 12, 2004  
CR 04-05575; Function Lost During Re-organization, September 10, 2004

NUCLEAR QUALITY ASSURANCE AUDITS AND SELF-ASSESSMENTS

Davis-Besse Nuclear Oversight Quarterly Assessment Report DB-C-04-03, November 10, 2004  
Davis-Besse Nuclear Oversight Quarterly Assessment Report DB-C-04-02, July 29, 2004  
Self-Assessment Report 2004-0103, August 9-20, 2004

INDEPENDENT CORRECTIVE ACTION PROGRAM ASSESSMENT

Independent Assessment Report of Corrective Action Program Implementation for the  
Davis-Besse Nuclear Power Station, November 15, 2004

POST-OUTAGE INITIATIVES

Davis-Besse Nuclear Power Station Operational Improvement Plan, Revision 5 and 6  
Davis-Besse Cycle 14 Post-Restart Commitments, September and October, 2004

## OTHER

### Miscellaneous Condition Reports:

CR 04-01711; Flow Deficit Cold Leg Discharge Line Break, March 4, 2004  
CR 03-10499; High Pressure Injection (HPI) Pump Hydraulic Performance, December 4, 2003  
CR 03-11103; Framatome Questions on DB-OP-02000 HPI Throttling Curve,  
December 18, 2003  
CR 04-00378; HPI Flow Balance Questions, January 14, 2004  
CR 04-01536; Improvements to DB-OP-02000 HPI Throttling Guidance, February 27, 2004  
CR 04-02767; AF(FV)6451 (AFW Pump 1-2 Discharge Solenoid Valve) Stroked Outside the  
Expected Range but not Re-tested or Made Inoperable, April 19, 2004  
CR 04-04891; Potential Issue with Timing of CAC Service Water Refill Logic After LOOP,  
August 2, 2004  
CR 03-06651; CAC #1, #2, #3 Bellows Assembly, August 18, 2003  
CR 04-00341; Missed visual and NDE , January 13, 2004  
CR 03-07351; CTMT Spray Pump 1 Failed to Start, September 5, 2003  
CR 04-07451; CARB Business Practice Clarification Required for Performing Remediation,  
December 6, 2004  
CR 03-03232; Procurement of SFAS Relays, July 11, 2003  
CR 03-06651, CAC #1, #2, #3 Bellows Assembly, February 23, 2004  
CR 04-01230, Missed Tech Spec Entry, March 3, 2004  
CR 04-04891, Potential Issue with Timing of CAC Service Water Refill Logic After LOOP,  
November 10, 2004  
CR 04-00341; Missed visual and NDE, January 30, 2004  
CR 03-07351; CTMT Spray Pump 1 Failed to Start, October 22, 2003

### Drawings and other Miscellaneous Documents:

Drawing 430221, Revision T3, Wiring Diagram KMG-HRH Microcomputer  
Drawing E-908A, Revision 5, Essential 120 V ac Instrument Distribution Panel "Y1A" Channel 1  
Drawing E-617, Sheet 4, Revision 3, Connection Diagram, Radiation Detection System,  
Remote Detectors  
Drawing E-7, Revision 34, 250/125 VDC and Instrumentation AC One Line Diagram  
USAR Change Notice No. 03-044, changes to sections 3D.2.9, 8.1.5, 8.3.1.1.4.1, dated  
May 3, 2004  
License Amendment Request No. 03-0017, dated May 3, 2004

### CONDITION REPORTS GENERATED DURING THIS INSPECTION

CR 04-07451; CARB Business Practice Clarification Required for Performing Remediation,  
February 6, 2004  
CR 04-07507; ST132OIN PACKING LEAKAGE, December 7, 2004  
CR 04-07508; MS131 ORDER, December 7, 2004  
CR 04-07617; Evaluation of SFAS Diode Restraint, December 14, 2004  
CR 04-07626; Identification of CARB Remediation of Rejected Evaluations, December 14, 2004  
CR 04-07629; Concern with Corrective Actions for CR 04-04891, December 14, 2004  
CR 04-07654; PCR-CR DB-OP-06316, Deficiency, December 15, 2004

CR 04-07657; Improper Closure of CR without Corrective Action, December 15, 2004  
CR 04-07660; No Documentation Could Be Found to Support Statement in LER,  
December 15, 2004  
CR 04-07662; Documentation of Oil Acceptability (Past Operability), December 15, 2004  
CR 04-07673; Potential Accuracy Concern, December 15, 2004  
CR 04-07730; Programmatic Concern Work Orders Correcting Equipment Problems with no  
CR written, December 17, 2004  
CR 04-07843; Corrective Actions Adequacy for Underground Wetted Cables,  
December 16, 2004

## LIST OF ACRONYMS USED

ADAMS	Agency-wide Document Access and Management System
AFPT	Auxiliary Feedwater Pump Turbine
AFW	Auxiliary Feedwater
ALARA	As Low As Is Reasonably Achievable
CCW	Component Cooling Water
CTMT	Containment
CFR	Code of Federal Regulations
CR	Condition Report
ECCS	Emergency Core Cooling System
FENOC	FirstEnergy Nuclear Operating Company
HPI	High Pressure Injection
IMC	Inspection Manual Chapter
IR	Inspection Report
JFG	Job Familiarization Guidelines
LER	Licensee Event Report
LOOP	Loss of offsite Power
NCV	Non-Cited Violation
NRC	United States Nuclear Regulatory Commission
OE	Operability Evaluation
PARS	Publicly Available Records
PI	Performance Indicator
RRATI	Restart Readiness Assessment Team Inspection
QFO	Quality Field Observation
SDP	Significance Determination Process
SFAS	Safety Features Actuation System
SW	Service Water
TS	Technical Specifications
USAR	Updated Safety Analysis Report
WO	Work Order