

December 9, 2002

Mr. Lew W. Myers  
Chief Operating Officer  
FirstEnergy Nuclear Operating Company  
Davis-Besse Nuclear Power Station  
5501 North State Route 2  
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION  
NRC INTEGRATED INSPECTION REPORT 50-346/02-17

Dear Mr. Myers:

On November 14, 2002, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Davis-Besse Nuclear Power Station. The enclosed report documents the inspection findings which were discussed on November 14, 2002, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. For the entire inspection period, the Davis-Besse Nuclear Power Station was under the Inspection Manual Chapter 0350 Process. The Davis-Besse Oversight Panel assessed inspection findings and other performance data to determine the required level and focus of followup inspection activities and any other appropriate regulatory actions. Even though the Reactor Oversight Process had been suspended at the Davis-Besse Nuclear Power Station, it was used as guidance for inspection activities and to assess findings.

Based on the results of this inspection, the NRC has determined that there were two findings of very low safety significance (green) identified in the report.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

***/RA by C.Lipa Acting for/***

John A. Grobe, Chairman  
Davis-Besse Oversight Panel

L. Myers

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Docket No. 50-346

License No. NPF-3

Enclosure: Inspection Report 50-346/02-17

cc w/encl: B. Saunders, President - FENOC  
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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-346/02-17

Licensee: FirstEnergy Nuclear Operating Company

Facility: Davis-Besse Nuclear Power Station

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

Dates: October 1, 2002, through November 14, 2002

Inspectors: S. Thomas, Senior Resident Inspector  
D. Simpkins, Resident Inspector  
R. Powell, Senior Resident Inspector (Perry Station)  
J. Jacobson, Reactor Inspector, DRS  
M. Holmberg, Reactor Inspector, DRS

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

## SUMMARY OF FINDINGS

IR 05000346-02-17, FirstEnergy Nuclear Operating Company, on 10/01-11/14/2002, Davis-Besse Nuclear Power Station. Identification and Resolution of Problems, Other Activities.

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

### A. Inspection Findings

#### **Cornerstone: N/A**

Green. The inspectors observed a licensee employee warning two other licensee employees about the presence of NRC inspectors. This was a licensee performance deficiency in that 10 CFR 50.70(b)(4) requires, in part, that "the arrival and presence of the NRC inspector is not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by the NRC inspector."

This was considered a finding of more than minor safety significance because if left uncorrected, it would become a more significant safety concern in that the NRC's ability to carry out its statutory mission would be impeded. The inspectors determined that this issue was not a violation of 10 CFR 50.70(b)(4) because the warning by the licensee employee was not widespread nor a significant intentional violation of the rule per the 10 CFR Part 50 Statement of Considerations. The inspectors concluded that this was a finding of very low safety significance (Green) that was not suited for analysis by the significance determination process. (Section 40A5.2)

#### **Cornerstone: Mitigating Systems**

Green. The inspectors identified numerous examples of the improper implementation of the licensee's corrective action program, in regards to evaluating and taking corrective actions for potentially reportable issues associated with the containment air coolers. This was a performance deficiency.

This was considered a finding of more than minor safety significance because if left uncorrected it would become a more significant safety concern in that it could adversely impact the NRC in its effort to identify and resolve issues important to public safety. The inspectors determined that the issue was not a violation of regulatory requirements because formal operability and reportability evaluations had not yet been completed. (Section 40A2.2)

**B. Licensee Identified Findings**

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

## REPORT DETAILS

### Summary of Plant Status

The plant was shutdown on February 16, 2002 for a refueling outage. During scheduled inspections of the control rod drive mechanism nozzles, significant degradation of the reactor vessel head was discovered. As a direct result of the need to resolve many issues surrounding the Davis-Besse reactor vessel head degradation, NRC management decided to implement Inspection Manual Chapter 0350, "Oversight of Operating Reactor Facilities in a Shutdown Condition With Performance Problems." The fuel was removed from the reactor on June 26, 2002, and the plant remained shut down. For the entire inspection period, the Davis-Besse Nuclear Power Station was under the Inspection Manual Chapter 0350 Process. As part of this Process, several additional team inspections were conducted. The subjects of these inspections included; Reactor Head Replacement, Containment Health/Extent of Condition, System Health Assurance, Management and Human Performance, and Program Compliance. The status of these inspections will not be included as part of this inspection report, but upon completion, each will be documented in a separate inspection report which will be made publically available on the NRC website.

### **1. REACTOR SAFETY**

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

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

##### a. Inspection Scope

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

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

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

##### b. Findings

No findings of significance were identified.

#### 1R04 Equipment Alignment (71111.04Q)

##### a. Inspection Scope

The inspectors verified equipment alignment and identified any discrepancies that impacted the function of the system and potential increased risk. The inspectors also

verified that the licensee had properly identified and resolved any equipment alignment problems that would cause initiating events or impact the availability and functional capability of this mitigating system. Specific aspects of this inspection included reviewing plant procedures, drawings, and the Updated Safety Analysis Report (USAR), to determine the correct system lineup and evaluating any outstanding maintenance work requests on the system or any deficiencies that would affect the ability of the system to perform its function. A majority of the inspector's time was spent performing a walkdown inspection of the system. Key aspects of the walkdown inspection included:

- valves were correctly positioned and do not exhibit leakage that would impact their function;
- electrical power was available as required;
- major system components were correctly labeled, lubricated, cooled, ventilated, etc;
- hangers and supports were correctly installed and functional;
- essential support systems were operational;
- ancillary equipment or debris does not interfere with system performance;
- tagging clearances were appropriate; and
- valves were locked as required by the licensee's locked valve program.

During the walkdown, the inspectors also observed the material condition of the equipment to verify that there were no significant conditions not already in the licensee's work control system. The inspectors performed a walkdown of the following system:

- spent fuel pool cooling system.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Protection Walkdowns of Risk Significant Plant Areas (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of fire fighting equipment, the control of transient combustibles, and on the condition and operating status of installed fire barriers. The inspectors selected fire areas for inspection based on their overall contribution to internal fire risk, as documented in the Individual Plant Examination of External Events (IPEEE), their potential to impact equipment which could initiate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed at the end of this report, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use, that fire detectors and sprinklers were unobstructed, that transient material loading was within the analyzed limits, and that fire doors, dampers, and penetration seals appeared to be in satisfactory condition.

The following areas or components were inspected:

- emergency core cooling system room 1;
- emergency core cooling system room 2;
- mechanical penetration room 1;
- mechanical penetration room 2; and
- battery room 1.

b. Findings

No findings of significance were identified.

.2 Plant Fire Drill Observation (71111.05A)

a. Inspection Scope

The inspectors observed a fire brigade drill performed in an area important to plant safety. Specific fire brigade performance attributes verified by the inspectors included:

- the fire brigade turnout gear was properly donned;
- the fire area of concern was entered in a controlled manner;
- sufficient fire fighting equipment was brought to the scene by the fire brigade;
- the fire brigade leader's fire fighting directions were clear and effective;
- radio communication between the fire brigade leader and the control room was efficient and effective;
- fire fighting pre-plan strategies were utilized; and
- the licensee's pre-planned drill scenario was followed and the drill objective acceptance criteria were met.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's inservice inspection program for monitoring degradation of the reactor coolant system boundary and risk significant piping system boundaries, based on review of records and in-process observation of nondestructive examinations. From February 20, 2002 through March 6, 2002, and September 30, 2002 through October 3, 2002, the inspectors performed the following activities:

- Observed acquisition and evaluation of eddy current data on the steam generators;
- Observed steam generator tube plugging and plug removal;
- Observed in-situ pressure test of tube 151-4 on steam generator A;
- Observed dye penetrant and ultrasonic examination of 10 inch pipe to elbow

- weld DH-33B-CCB-6-7-SWB;
- Reviewed repair and replacement records required by the American Society of Mechanical Engineers (ASME) Code for the following components:
  - Work Order 99-005601-00 Containment Spray Pump 1-1
  - Work Order 99-4337-008 Decay Heat Low Pressure Injection
- Reviewed UT examination reports and evaluations for a linear indication identified in the main steam line atmospheric vent line weld MS 3A-EEB-1-30-FW-15a; and
- Reviewed Steam Generator Condition Monitoring Results and Operational Assessments for Cycles 12 and 13.

The records reviewed and activities observed were evaluated for conformance with requirements in the ASME Code, Section III, Section V, Section IX, and Section XI.

The inspectors also reviewed a sample of inservice inspection related problems documented in the licensee's corrective action program, to assess conformance with 10 CFR Part 50 Appendix B, Criterion XVI "Corrective Action" requirements.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the maintenance rule requirements to verify that component and equipment failures were identified and scoped within the maintenance rule and that select structures, systems and components were properly categorized and classified as (a)(1) or (a)(2) in accordance with 10 CFR 50.65. Specifically, the inspectors reviewed equipment issues and performance problems associated with the doors and hatches providing separation of essential trains for flooding, high energy line breaks, and negative and positive pressure conditions to verify the doors and hatches were properly scoped in accordance with the Maintenance Rule, whether failures were properly characterized, and whether performance criteria were appropriate.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's management of plant risk during the implementation of the main generator relaying protection upgrade (Modification 90-0002). This activity was chosen based on its potential impact on increasing the probability of an initiating event or impacting the operation of safety

significant equipment. The inspection was conducted to verify that evaluation, planning, control, and performance of the work were done in a manner to reduce the risk and minimize the duration where practical, and that contingency plans were in place where appropriate. The licensee's daily configuration risk assessments, observations of shift turnover meetings, observations of daily plant status meetings, and the documents listed at the end of this report were used by the inspectors to verify that the equipment configurations had been properly listed, that protected equipment had been identified and was being controlled where appropriate, and that significant aspects of plant risk were being communicated to the necessary personnel.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

a. Inspection Scope

On November 2, 2002, the inspectors completed their review of licensee personnel performance during a drain of the reactor coolant system. The inspectors compared operator performance to the applicable procedures, reviewed plant data and observed radiation and work control pre-job briefs.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors selected condition reports (CRs) which discussed potential operability issues for risk significant components or systems. These CRs were evaluated to determine whether the operability of the components or systems was justified. The inspectors compared the operability and design criteria in the appropriate sections of the Technical Specifications and USAR to the licensee's evaluations presented on the issues listed below to verify that the components or systems were operable. Where compensatory measures were necessary to maintain operability, the inspectors verified by review of the documents listed at the end of the report that the measures were in place, would work as intended, and were properly controlled.

The issues evaluated were:

- station blackout diesel generator cylinder exhaust temperatures low; and
- emergency diesel generator 1 crankcase lube oil silicon concentration exceeding established 10 ppm limit.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed post-maintenance testing activities associated with maintenance on important mitigating and support systems to ensure that the testing adequately verified system operability and functional capability with consideration of the actual maintenance performed. The inspectors used the appropriate sections of Technical Specifications and the USAR, as well as the documents listed at the end of this report, to evaluate the scope of the maintenance and verify that the post-maintenance testing performed adequately demonstrated that the maintenance was successful and that operability was restored. In addition, the inspectors reviewed CRs to verify that any minor deficiencies identified during these inspections were entered into the licensee's corrective action system. The inspectors observed and evaluated test activities associated with the following:

- decay heat valve 14A and 14B flow balancing;
- station air compressor 2 motor repair; and
- station blackout diesel generator, post outage.

b. Findings

No findings of significance were identified

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors witnessed the surveillance test and test data to verify that the equipment tested met Technical Specifications, USAR, and licensee procedural requirements, and also demonstrated that the equipment was capable of performing its intended safety functions. The activity was selected based on its importance in verifying mitigating system capability. The inspectors used the documents listed at the end of this report to verify that the test met the TS frequency requirements; that the test was conducted in accordance with the procedures, including establishing the proper plant conditions and prerequisites; that the test acceptance criteria were met; and that the results of the test were properly reviewed and recorded.

The following test was observed and evaluated:

- Emergency Diesel Generator #2 monthly start.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES (OA)**

#### 4OA1 Performance Indicator (PI) Verification (71151)

##### a. Inspection Scope

The inspectors reviewed the reported data for the following Performance Indicators:

- Safety System Functional Failures (January 1 to September 30, 2002);
- Safety System Unavailability for the Residual Heat Removal System (January 1 to September 30, 2002); and
- Reactor Coolant System Specific Activity (April 1, 2001 to March 31, 2002).

The inspectors used the definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Indicator Guideline," Revision 2. The inspectors reviewed station logs, event notification reports, engineering logs, licensee event reports, condition reports, and chemistry data to verify the accuracy of the licensee's data submission. Additionally, the inspectors reviewed revised reporting methodology developed in response to inspector identified concerns addressed by CR 02-7462, "HPI System NRC Performance Indicator Desk Top Guide Inaccuracy in Unavailability."

##### a. Findings

No findings of significance were identified.

#### 4OA2 Routine Review of Identification and Resolution of Problems (71151)

##### .1 Licensee Resolution of Condition Reports Containing Mode Restraints

##### a. Inspection Scope

The inspectors began to review the licensee's process of resolving issues that had been placed into their corrective action program and had also been assigned a restraint for resolution prior to entering a specific operational Mode. The inspectors obtained a listing, dated November 5, 2002, of open condition reports with assigned mode restraints. This list contained approximately:

- 15 Mode 1 restraints;
- 42 Mode 2 restraints;
- 168 Mode 3 restraints;
- 541 Mode 4 restraints;
- 111 Mode 5 restraints; and
- 168 Mode 6 restraints.

Included as part of the corrective action to close out the condition reports that contained Mode restraints were attachments that specifically stated the corrective action taken to lift the Mode restraint. The inspectors evaluated a sampling of condition reports which contained completed corrective actions for restraints assigned to Mode 6.

##### b. Findings

No findings of significance were identified.

.2 Inadequate Implementation of the Corrective Action Process Which Led to Not Identifying a Potentially Reportable Issue

a. Introduction

The inspectors identified a Green finding when the licensee failed to properly implement the corrective action program for a potential operability issue involving all three of the containment air coolers.

b. Description

As part of their routine evaluation of condition reports, the inspectors engaged the licensee regulatory affairs staff regarding condition reports which documented evaluation of past operability issues and that had the potential to be reportable under the guidelines of 10 CFR 50.73. The inspectors inquired about how the issues documented in CR 02-2943, "Containment Air Cooler Boric Acid Corrosion," had been resolved. This condition report, which identified potential seismic issues with all three containment air cooler support frames, rolled a large number of condition reports into one and included numerous corrective actions. This condition report was not identified as a potentially reportable issue and the regulatory affairs staff was unaware of this issue or that it was potentially a reportable issue under 50.73. Further evaluation revealed that, despite the fact that this condition report was classified as a significant condition adverse to quality and clearly states that the system has been declared inoperable, a number of additional issues were identified by the inspector during the review of condition report.

- The operations staff did not check the block that would have required a formal operability evaluation be performed

NOP-LP-2001, "Condition Report Process," step 4.2.6.2, provided instruction that the SRO shall "determine if an evaluation from a designated organization(s) is required to support your determination of operability or functionality." The originator of this condition report clearly stated that the system [containment air coolers] had been declared inoperable, but there was no information regarding why. Since each condition report must be treated as a stand alone document, there was insufficient basis documented in the condition report which justified the SRO's decision to not request a formal operability evaluation.

- The operations staff did not check the block that would have required a formal reportability evaluation be performed

NOP-LP-2001, "Condition Report Process," step 4.2.6.5, provided instruction that the SRO shall "determine if the condition is reportable and if additional reportability review evaluation is required or needed." Additionally, the Programmatic Guideline for the Davis-Besse Condition Reporting Process, step 4.2.7.5, in part, stated "for reportable events at Davis-Besse, the only events that are considered reportable by operations are those specified in DB-OP-00002

(Operations Section Event/Incident Notifications and Actions), and those reportable by Regulatory Affairs in accordance with 10 CFR 50.73.” The originator of this condition report clearly stated that the system [containment air coolers] had been declared inoperable, but there was no information regarding why it was inoperable or how long it had been in that condition. Since the extent of the condition was unknown and the potential that this condition existed during operational modes when the containment air coolers were required, a formal reportability evaluation was required to be performed to address those questions.

- The regulatory affairs staff review of the condition report missed the fact that this issue had the potential to be reportable

The Programmatic Guideline for the Davis-Besse Condition Reporting Process, step 4.5.1, in part, stated “designated Regulatory Affairs personnel shall review all condition reports to determine reportability.” The potential reportability of this issue was not identified by the licensee’s Regulatory Affairs staff.

- The regulatory affairs staff checked the “reportable” block “no” prior to completion of the operability checks for each the three containment air cooler.

Operability evaluations for the three containment air coolers were inappropriately assigned as corrective actions for Condition Report 02-2943. These operability evaluations were to be used to scope the extent of condition of the containment air coolers and whether they would have been operable when required, considering the fact that the degradation described in the condition report existed in the past. Prior to these operability evaluations being completed, the Regulatory Affairs staff inappropriately concluded that the issue was not reportable. Additionally, the due dates for corrective actions, which were initiated on July 3, 2002, a day after the condition report was issued, had been extended multiple times and were presently set at December 1, 2002. The time period for assessment was clearly in excess of the 60-day time clock for reportable issues as outlined in 10 CFR 73.

c. Analysis

The issue represented a licensee performance deficiency. The inspectors identified numerous examples of the improper implementation of the licensee’s corrective action program, in regards to evaluating and taking corrective actions for potentially reportable issues documented in Condition Report 02-2943. This was considered a finding of more than minor safety significance because if left uncorrected it would become a more significant safety concern in that it could adversely impact the NRC in its effort to identify and resolve issues important to public safety.

The inspectors determined that this issue was not a violation of regulatory requirements. Although the inspectors identified examples of the improper implementation of the licensee’s corrective action program, formal operability and reportability evaluations had not yet been completed.

The inspectors concluded that this was a finding was of very low safety significance

(Green) that was not suited for analysis by the significance determination process and was not a violation of regulatory requirements.

#### 4OA3 Event Follow-UP (71153)

##### .1 (Closed) LER 50-346/2002-004-00: Containment Isolation Closure Requirements for RCP Seal Injection Valves MU66A-D.

This LER documents a condition where the pressure regulating valve setpoint for the reactor coolant pump seal injection valves (MU66A-D) was inadequate to ensure closure of the valves upon receipt of a containment isolation signal. This condition represents a potential common-mode failure. As a result of this condition, during postulated accident conditions, a potential for uncontrolled radioactive leakage outside containment could be created. This condition has apparently existed since original plant construction, and is a violation of Technical Specification 3.6.3.1 for Modes 1-4. In addition, the valves were determined to be installed inconsistent with design assumptions. The causes of these conditions are less than adequate design interface communication and design control. Design basis for category 1 and 2 air operated valves (AOVs) and their associated components will be established in accordance with the AOV reliability program manual. MU66A-D and all other category 1 and 2 AOVs will be verified to conform to their design basis requirements.

The licensee identified that the pressure regulating valve setpoint for the reactor coolant pump (RCP) seal injection was inadequate to ensure closure of the valves upon receipt of a containment isolation signal. The condition apparently existed since original plant construction. Downstream of these isolation valves are check valves that are designed to prevent flow out of the reactor coolant system, thereby isolating the flow path regardless of whether the RCP seal injection valves are closed. The test history of the check valves was determined to be highly reliable and had no test failures in the past 10 years. The regional SRA performed a Phase 3 assessment and determined that the issue had very low safety significance (green) due to the low initiating event frequency of an interfacing system loss of coolant accident (ISLOCA),  $1E-7$ , coupled with the check valve's failure probability to prevent a potential ISLOCA if the RCP seal injection valve failed. The SRA also reviewed the licensee's risk assessment and determined that the calculation was conservative given the assumptions used. The licensee's analysis determined that the change in core damage frequency was in the  $1E-8$  range.

This LER was originally discussed in IR 50-346/02-10 and considered to be an Unresolved Item (URI) (URI 50-346/02-10-2), pending a formal evaluation of the risk imposed by this design issue. Based on the above evaluation of risk, URI 50-346/02-10-2 has been closed. A licensee-identified violation associated with this issue is discussed in Section 4OA7 of this report.

#### 4OA5 Other Activities

One of the key building blocks in the licensees' Return to Service Plan was the Management and Human Performance Excellence Plan. The purpose of this plan was to address the fact that "management ineffectively implemented processes, and thus failed to detect and address plant problems as opportunities arose." The primary

management contributors to this failure were grouped into the following areas:

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

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

#### .1 Resident Inspector Observations of Minor Issues Related to Restart Readiness

Examples of such observations included:

- Large Backlog of Open Significant Root Cause Evaluations

One issue that continued to challenge the inspectors' ability to assess the current overall status of licensee performance was the large number of root cause evaluations still in progress to support the resolution of several condition reports that were classified as Significant Conditions Adverse to Quality. At the time this report was submitted, the licensee had a backlog of 86 open root cause analysis in progress to address documented issues the licensee had deemed significant issues adverse to quality.

- Failure to Install Equipment Hatch During Severe Weather

On November 10, 2002, in response to a tornado warning, the Shift Manager directed the Duty Maintenance Supervisor to install the containment equipment hatch. On multiple occasions, maintenance personnel contacted operations personnel to inquire if the equipment hatch still needed to be installed. The net result was that the severe weather passed through the area, the tornado warning was lifted, and the equipment hatch never was installed. This example demonstrates that the organization has not fully internalized how an operations led organization functions.

This issue is of minor risk significance because no tornados were actually spotted in the owner controlled area and the action to install the containment equipment hatch was beyond the actions required by the licensee's severe weather procedure for the existing plant configuration. This issue was captured in the licensee corrective action program as CR 02-9213.

These issues were selected because they occurred throughout the reporting period and illustrate examples of ongoing weaknesses in engineering, operations, and maintenance

with respect to Standards and Decision-Making, Oversight and Assessments; and Program/Corrective Action/Procedure Compliance or challenged the ability of the inspectors to assess the current overall status of licensee performance.

.2 Inappropriate Licensee Notification of NRC Inspector Activity

a. Introduction

The inspectors identified a Green finding when the inspectors observed licensee personnel forewarning other licensee personnel about the presence of NRC inspectors in containment. This was not considered a violation of regulatory requirements.

b. Description

On November 8, 2002, while conducting a review of major work activities in containment, two inspectors overheard a conversation between three licensee employees. The conversation, in part, was as follows: "I am surprised that RP [radiation protection personnel] let you into containment without any safety glasses,..... If you are going to work without glasses, be careful not to get anything in your eyes,..... and watch yourself because I heard that the NRC were on their way into containment." Since it was obvious that the licensee employee was not going to correct an infraction of the FENOC Industrial Safety Manual that states in part, that "safety glasses with side shields shall be worn in all buildings in the protected area, except office areas," the inspector introduced himself and informed the individual without safety glasses that he needed to get some. Upon leaving containment, the inspectors informed senior licensee management of the conversation.

The inspector informed licensee management that employees who are aware of safety requirements should enforce those requirements when deficiencies are observed. Additionally, licensee employees should not warn other licensee employees of the NRC inspector's presence as it could leave impression that behavior of licensee individuals was dependent on whether or not the NRC inspector was watching a given activity.

c. Analysis

The inspectors determined that the issue represented a licensee performance deficiency. 10 CFR 50.70(b)(4) requires, in part, that "the arrival and presence of the NRC inspector is not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by the NRC inspector." This was considered a finding of more than minor safety significance because if left uncorrected, it would become a more significant safety concern in that the NRC's ability to carry out its statutory mission would be impeded. The ability for the inspectors to evaluate "as-found" plant conditions and to observe work activities in progress, without forewarning of their presence, is essential for assessing the day-to-day performance of the licensee.

The inspectors determined that this issue was not a violation of regulatory requirements. "[10 CFR] Part 50 Statement of Considerations," October 25, 1988, states that "The intent of this rule is to prevent site and contractor personnel from widespread

dissemination . . . of the presence of an NRC inspector. It further states that " . . . the NRC expects to reserve enforcement action for significant intentional violations of the rule." The inspectors determined that there was no widespread dissemination of the presence of the NRC inspectors. A licensee mechanical maintenance person observed the NRC inspectors signing in at the auxiliary building radiation protection access point prior to entering containment. The same person warned the two other licensee employees of the NRC inspectors in containment. In addition, the inspectors determined that there was no significant intentional violation of the rule. The licensee reviewed General Employee Training and found no specific reference to 10 CFR 50.70(b)(4). Because the mechanical maintenance person was not trained on the regulation the inspectors determined that there was not a significant intentional violation of the rule. The licensee took action to include the regulation in General Employee Training.

The inspectors concluded that this was a finding was of very low safety significance (Green) that was not suited for analysis by the significance determination process and was not a violation of regulatory requirements.

#### 40A6 Exit Meetings

.1 The inspectors presented the inspection results to Mr. Fast, Plant Manager, and other members of licensee management on November 14, 2002. The licensee acknowledged the findings presented. No proprietary information was identified.

#### .2 Intrim Exit Meeting

Biennial Inservice Inspection Activities (IP 71111.08) with Mr. A. Alford on October 3, 2002. Proprietary information was received and reviewed by the inspector and subsequently returned to the licensee. Licensee attendees at the interim exit acknowledged the findings presented and did not identify any potential report input as proprietary information.

40A7 Licensee Identified Violations: The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as Non-Cited Violations (NCVs):

NCV Tracking Number

Requirements Licensee Failed to Meet

50-346/02-17-01

Technical Specification 3.6.3.1 requires that “all containment isolation valves shall be operable with isolation times less than or equal to required isolation times” for Modes 1, 2, 3, and 4.

Contrary to this requirement, a condition was identified where the pressure regulating valve setpoint for the reactor coolant pump seal injection valves (MU66A-D) was inadequate to ensure closure of the valves upon receipt of a containment isolation signal. This issue was determined to be of very low safety significance and will be treated as an NCV. This issue was documented in section 4OA3.1 of this report.

If the licensee contests these NCVs, the licensee should provide a response within 30 days of the date of this inspection report, the basis for the denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, Region III; Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Davis-Besse facility.

## KEY POINTS OF CONTACT

### Licensee

A. Alford, Regulatory Affairs  
C. Daft, Staff Nuclear Engineer  
L. Meyers, Chief Operating Officer, FENOC  
R. Fast, Plant Manager  
G. Dunn, Outage Manager  
D. Gerren, Steam Generator Engineer  
J. Grabnar, Manager, Design Engineering  
G. Honma, Supervisor, Compliance  
D. Imlay, Superintendent, E&C Maintenance  
P. McCloskey, Manager, Regulatory Affairs  
G. Melssen, Maintenance Rule Coordinator  
W. Mugge, Manager, Nuclear Training  
R. Pell, Manager, Chemistry and Radiation Protection  
J. Powers, Director, Nuclear Engineering  
R. Rishel, PRA Specialist  
M. Roder, Manager, Plant Operations  
J. Rogers, Manager, Plant Engineering  
R. Schrauder, Director, Support Services  
A. Schumaker, Supervisor, Access Control (Acting)  
G. Skeel, Manager, Nuclear Security  
M. Stevens, Director, Work Management  
G. Wolf, Senior Licensing Engineer

LIST OF ITEMS OPENED CLOSED AND DISCUSSED

Opened

50-346/02-17-01	NCV	Containment Isolation Closure Requirements for RCP Seal Injection Valves MU66A-D.
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Closed

50-346/2002-004	LER	Containment Isolation Closure Requirements for RCP Seal Injection Valves MU66A-D
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50-346/02-10-02	URI	Containment Isolation Closure Requirements for RCP Seal Injection Valves MU66A-D
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50-346/02-17-01	NCV	Containment Isolation Closure Requirements for RCP Seal Injection Valves MU66A-D
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## LIST OF ACRONYMS USED

ADAMS	Agency-wide Document Access and Management System
AOV	Air Operated Valve
ASME	American Society of Mechanical Engineers
CARD	Condition Assessment Resolution Document
CFR	Code of Federal Regulations
CR	Condition Report
DHR	Decay Heat Removal
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
FENOC	FirstEnergy Nuclear Operating Company
HPI	High Pressure Injection
IMC	Inspection Manual Chapter
IR	Inspection Report
IPEEE	Individual Plant Examination of External Events
ISLOCA	Inter-System Loss of Coolant Accident
IST	Inservice Test
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
NCV	Non-Cited Violation
NRC	United States Nuclear Regulatory Commission
OHS	Office of Homeland Security
PARS	Publically Available Records
PI	Performance Indicator
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
SSC	System, Structure or Component
SDP	Significance Determination Process
SFP	Spent Fuel Pool
SP	Surveillance Procedure
TS	Technical Specifications
URI	Unresolved Item
USAR	Updated Safety Analysis Report

## LIST OF DOCUMENTS REVIEWED

### 1R01 Adverse Weather

DB-OP-6913	Season Plant Preparation Checklist	Rev. 4
CR 02-06569	Heat Trace and Freeze Protection System Degradation and Aging	
CR 02-05764	SHHR - Freeze Protection for HPI Pump Minimum Recirculation Line	
CR 02-01187	BWST Vent Freeze Protection Circuit 12 Thermocouple Failed	
CR 00-4107	Tech Spec Freeze Protection Point P97, BWST Overflow at below 32 Degrees	
CR 02-00921	Forebay Ice During Winter Refueling Outages	
DB-OP-06331	Freeze Protection and Electrical Heat Trace	Rev. 4

### 1R04 Equipment Alignment

M-035	Piping and Instrumentation Diagram - Spent Fuel Pool Cooling System	Rev. 48
OS-007	Operations Schematic - Spent Fuel Pool Cooling System	Rev. 19

### 1R05 Fire Protection

NRC Reg. Guide 1.189	Fire Protection for Operating Nuclear Power Plants	
FHAR	Davis Besse Fire Hazard Analysis Report	Rev. 42
DBNPS PFP	Davis Besse Pre-fire Plan	Rev. 2
CR 02-08525	Improperly Routed Fire Hose on Hose Reel	
CR 02-08404	Fire Door Blocked Open	
CR 02-0835	Fire Protection Piping Support Rusting in Service Building 5	
CR 02-08157	Automatic Start of Electric Fire Pump	
CR 02-07459	Fire Barriers and Penetrations	
CR 02-07009	Shrr Switchyard/transformers - X01 Fire Water Piping Support Split	
CR 02-06845	Fire Watch Extinguishers	
CR 02-06834	Smoldering Fire in Containment Building	

CR 02-06769	Fire in Containment
CR 02-06533	Inadequate Fire Brigade Protective Equipment
CR 02-06525	Failed Appendix R Fire Wrap
CR 02-06452	Inadequate Number of Wraps of 3-m Firewrap Material
CR 02-06292	Accessibility to Fire Protection Equipment (Valve Fp269) Hindered
CR 02-05378	Missing Nuts on Fire Protection Flange
CR 02-04332	Delay in Establishing Compensatory Actions for Known Fire Impairment
CR 02-03961	Lack of Communication Regarding Fire Risks

1R08 Inservice Inspection Activities

CR 00-1187	Indication on Main Steam Line Outlet Nozzle	02/20/02
CR 02-00724	Loose Bolting on Snubber on Hanger DH-33C-GCB-10-H22	02/22/02
CR 02-00721	Cracked Welded OTGC Plugs	02/22/02
CR 02-01165	13RFO Eddy Current Examination of OTSGs Identified Tubing Flaws	03/10/02
Modification 98-0045	Steam Generator Repairs 12th Refueling	Rev. 0
	Radiographic Record FW-171; Boric Acid/HPCI Crossover System	04/14/00
	Radiographic Record FW-140; Boric Acid/HPCI Crossover System	03/20/00
	Radiographic Record FW-161; Boric Acid/HPCI Crossover System	03/30/00
	Ultrasonic Examination Record UT-002; 8 inch MS875 valve-to-elbow weld	02/19/02
	Ultrasonic Examination Record; 10 " Core Flood Line Weld 10-33B-CCB-6-7-SWB	02/22/02
	Magnetic Particle Examination Record; 10 inch Core Flood Line Weld 10-33B-CCB-6-7-SWB	02/21/02
	Procedure 54-IS-367-03; Visual Examination for Leakage of the Reactor Vessel Head	Rev. 3

Procedure 54-IS-100-06; Remote Ultrasonic Examination of Control Rod Drive Mechanism (CRAM) Nozzles	Rev. 6
Procedure DB-PF-05058; Steam Generator Eddy Current Data Analysis Guidelines	Rev. 3
Procedure 51-5001484-02; Qualified Eddy Current Examination Techniques for Davis Besse	01/28/02
Procedure 54-IS-836-04; Ultrasonic Examination of Austenitic Piping Welds	Rev. 4
Work Order 99-005771-00; IS VT-3 Bolting Examination	07/05/00
Work Order 91-005601-00; Containment Spray Pump 1-1	01/28/00
Bobbin Probe Fill Factor Equivalency; 51-5012000-00	04/06/01
Eddy Current Probe Extension Cable Comparison; 51-5014354-00	09/10/01
Code Reconciliation Alloy 690; 51-1264415-03	10/01/97
Certified Material Test Report 29861; Inconel Filler Material M.O. 82	10/25/94
Condition Monitoring Results for Davis Besse at Outage 12RFO and Operational Assessment for Cycle 13; MEECH-0734-SR-3	Rev. 0
CMA Evaluation of Steam Generator Tubing at Davis Besse 13RFO; FA-DB-011-0	Rev. 0
Gas Tungsten Arc Welding of Stainless Steel P(8) Groove With or Without Backing; WAS-A-8-2-1	Rev. 1
Procedure Qualification Record GAW; PER-003	03/09/77
Procedure Qualification Record GAW; PER-007	03/31/78
Eddy Current Examination Manual Davis Besse Unit 1 RAO 13	Rev. 0

1R12 Maintenance Effectiveness

NUMARC 93-01	Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	Rev. 2
CR 00-4139	Security/Fire Door	
CR 01-0023	Inoperable Fire Door Without Compensatory Measures	
CR 01-1886	Door 205 (Mech. Pen Room #2) Malfunction	
CR 01-2632	Door 104A Found Open	

CR 01-3472	Door 427 Problem	
CR 02-0197	Functional Failure of Door 302	
CR 02-0442	Door 201A (MPR#1) Was Found Open When Approached by a Contract Employee	
CR 02-1961	Door 509 Failed Inspection Criteria	
CR 02-2791	Door 306 Found Unlatched	
CR 02-4078	Door 406 Latch Failure	
CR 02-5483	Door 308 Does Not Fully Close and Latch	

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

Contingency Plan for Main Generator Protection Upgrade Amod 90-0002, 13RFO-9	Rev 0
13 RFO Weekly Risk Summary (week of October 21, 2002)	

1R14 Personnel Performance in Non-Routine Evolutions

DB-OP-06002	RCS Draining and Nitrogen Blanketing	Rev. 4
Standing Order 2002-0016	Radiation Protection Guidance for Monitoring	Rev. 1

1R15 Operability Evaluations

CR 02-08686	SBODG cylinder exhaust temperatures low	
DB-SC-04271	SBODG Monthly Test	Rev. 3
Operability Justification 2002-0034	EDG Lube Oil Monitoring	Rev. 0
CR 02-3732	EDG Lube Oil Monitoring EDG Crankcase Lube Oil Sample Results (February - June, 2002)	
EN-DP-01074	Predictive Maintenance	Rev. 3
M-180-00092	Instruction Manual 2600KW Emergency Dsl Generator Book 1	Rev. 0

Component/ Parameter Scoping Sheet CPS- 4025	#1 EDG Engine & Generator Lubrication Analysis	Rev. 7
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1R19 Post-Maintenance Testing

Work Order 02-1796-000	Station Blackout Generator Relay Calibrations	Rev. 0
Work Order 02-3190-000	Station Blackout Generator Air-Start Compressor Train 2	Rev. 0
Work Order 02-982-000	Station Blackout Diesel Generator	Rev. 0
Work Order 02-6506-000	Station Blackout Radiator fan Motor 1	Rev. 0
Work Order 02-985-000	Station Blackout Battery Charger	Rev. 0
Work Order 02-983-000	Station Blackout Diesel Generator	Rev. 0
Work Order 02-5483-000	Station Blackout Batteries	Rev. 0
Work Order 02-984-000	Station Blackout Generator Relaying Cabinet	Rev. 0
DB-SS-4013	Station Air Compressor No. 2 Performance Check	Rev. 2
DB-OP-6251	Station and Instrument Air Operating Procedure	Rev. 2
CR 02-9050	Station Air Compressor 2 Oil Discoloration	
DB-SC-4271	Station Blackout Diesel Generator Monthly Test	Rev. 3
CR 02-05911	Surveillance 4.5.2.H Not Met Following Modifications to DH14A/B	
DB-SP-10072	LPI System Injection Test	Rev. 0
DB-SP-10065	DH 13A/B and DH 14A/B Valve Test	Rev. 1
C-NSA- 049.02-010	Review of Test Data from DB-SP-10065 for Valve DH14A	

1R22 Surveillance Testing

DB-SC-3071	Emergency Diesel Generator 2 Monthly Test	Rev. 3
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4OA1 Performance Indicator (PI) Verification

NG-RA-00810	Reactor Oversight NRC Performance Indicator Program	Rev. 0
CR 02-7462	HPI System NRC Performance Indicator Desk Top Guide Inaccuracy in Unavailability	
CR 02-3615	NRC Performance Indicator Input Data Sheets Missing	
CR 01-2558	Reactor Coolant Iodine	
CR 01-0132	Reactor Coolant Iodine 131 Increase	
Performance Indicator Data Input Sheets,	Residual Heat Removal (January-September 2002)	
DB-CH-01815	Dose Equivalent I-131 Determination	Rev. 0

4OA2 Problem Identification and Resolution

CR 02-794	Containment Purge Valve CV5007 Failed Stroke Time Test	
CR 02-3114	Decay Heat Valve 14A	
CR 02-3339	Reactor Cavity Seal Plate Seal Clamp	
CR 02-3662	CV5003A Did Not Fully Close During Testing	
CR 02-3833	Ineffective Implementation of Corrective Action for CR 01-2820 Component Cooling Water to Emergency Diesel Generators	
CR 02-3711	Latent Issue Review - Emergency Diesel Generator- Nuisance Alarm at Local Emergency Diesel Generator Panel for Alternate Shutdown	
CR 02-4336	CRNVS Equipment Requirements During Fuel Handling in Modes 5 and 6.	
CR 02-4752	Latent Issue Review - Emergency Diesel Generator - Fire Damper FD1036 Possible Obstruction	
	Nuclear Operating Administrative Procedure NOP-LP-2001 - Condition Report Process	Rev. 1
	Programmatic Guideline for Davis-Besse Condition Reporting Process	Rev. 0
CR 02-9314	Untimely Determination of Condition Reportability	

4OA3 Event Follow-up

LER 50-346/2002-004  
Containment Isolation Closure Requirements for RCP Seal  
Injection Valves MU66A-D

CR 02-9314 Untimely Determination of Condition Reportability

4OA5 Other Activities

CR 02-8860 Potential FME in #3 Containment Air Cooler Motor

CR 02-9213 Equipment Hatch Not Installed in a Timely Manner

CR 02-9278 Potential Violation of 10CFR50.70, Notification of Inspection  
Independent Investigation Report of CR 02-9278