

October 23, 2001

Mr. Guy G. Campbell  
Vice President - Nuclear  
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 INSPECTION REPORT 50-346/01-12

Dear Mr. Campbell:

On September 30, 2001, the NRC completed an inspection at your Davis-Besse Nuclear Power Station. The enclosed report documents the inspection findings which were discussed on October 10, 2001, with Mr. Bergendahl 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.

No findings of significance were identified.

Since September 11, 2001, the Davis-Besse Nuclear Power Station has assumed a heightened level of security based on a series of threat advisories issued by the NRC. Although the NRC is not aware of any specific threat against nuclear facilities, the heightened level of security was recommended for all nuclear power plants and is being maintained due to the uncertainty about the possibility of additional terrorist attacks. The steps recommended by the NRC include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with local law enforcement and military authorities, and limited access of personnel and vehicles to the site.

The NRC continues to interact with the Intelligence Community and to communicate information to the Davis-Besse Nuclear Power Station. In addition, the NRC has monitored maintenance and other activities which could relate to the site's security posture.

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/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

Original signed by  
Christine A. Lipa

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

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

Enclosure: Inspection Report 50-346/01-12(DRP)

cc w/encl: B. Saunders, President - FENOC  
Plant Manager  
Manager - Regulatory Affairs  
M. O'Reilly, FirstEnergy  
Ohio State Liaison Officer  
R. Owen, Ohio Department of Health  
A. Schriber, Chairman, Ohio Public  
Utilities Commission

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-346/01-12(DRP)

Licensee: FirstEnergy Nuclear Operating Company

Facility: Davis-Besse Nuclear Power Station

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

Dates: August 24 through September 30, 2001

Inspectors: K. Zellers, Senior Resident Inspector  
D. Simpkins, Resident Inspector  
K. Green-Bates, Engineering Specialist

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

## SUMMARY OF FINDINGS

Inspection Report 05000346-01-12, on 08/24-09/30/2001, FirstEnergy Nuclear Operating Company, Davis-Besse Nuclear Power Station. Integrated Inspection Report.

This report covers a 6-week routine inspection conducted by resident inspectors and a regional engineering specialist. No findings of significance were identified during this inspection. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/NRR/OVERSIGHT/index.html>. Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation.

A. Inspector Identified Findings

No findings of significance were identified.

B. Licensee Identified Findings

No findings of significance were identified.

## Report Details

### Summary of Plant Status

The plant operated at 100 percent power throughout most of the inspection period. Exceptions were for brief power reductions to about 93 percent for turbine testing, and to 90 percent at the request of the system dispatcher.

## **1. REACTOR SAFETY**

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

#### 1R04 Equipment Alignments (71111.04)

##### a. Inspection Scope

The inspectors walked down portions of the risk significant train #2 auxiliary feedwater (AFW) system. The inspectors conducted partial walk-down inspections by comparing station configuration control documentation with actual system/train lineups for the train #1 auxiliary feedwater system outage.

##### b. Findings

No findings of significance were identified.

#### 1R05 Fire Protection (71111.05)

##### a. Inspection Scope

The inspectors verified fire protection program implementation by observing a fire brigade drill. Elements inspected were: protective clothing properly donned, fire hoses used appropriately, fire area entered in a controlled manner, sufficient equipment to fight the fire brought to the scene, effective command and control of the fire brigade, fire fighting pre-plan strategies were utilized, drill scenario followed and drill objectives met.

##### b. Findings

No findings of significance were identified.

#### 1R06 Flood Protection Measures (71111.06)

##### a. Inspection Scope

The inspectors verified that flooding mitigation equipment were consistent with licensee design requirements and risk analysis assumptions. Equipment reviews included sealing of equipment below flood-lines, holes or unsealed penetrations in floors and walls between flood areas, watertight doors, common drain systems and sumps, and level alarm circuits. Area inspected was the heater bay area.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

The inspectors observed risk-important licensed operator actions and emergency plan implementation for a loss of coolant scenario on the plant simulator to identify deficiencies and discrepancies in the training and to assess operator performance and evaluator critiques.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed equipment issues, surveillance failures, and other performance problems for the items listed below. The inspectors reviewed whether the components were properly scoped in accordance with the Maintenance Rule, whether the failures were properly characterized, and whether the performance criteria were appropriate.

- Station Blackout Diesel Generator
- Station Air Compressor #2
- Service Water Relief Valves
- Emergency Diesel Generator Air Start System
- Emergency Diesel Generator Ventilation Hydramotors
- Valve MS106 Contactors

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors evaluated the effectiveness of the risk assessments performed before maintenance was conducted on structures, systems and components (SSCs) and

verified how risk was managed and if maintenance risk assessments and emergent work problems were adequately identified and resolved for the following activities:

- Control Rod 4-7 remaining on the Auxiliary Control Bus
- Decay Heat Pump #2 Outage

b. Findings

No findings of significance were identified.

1R14 Performance in Non-Routine Evolutions (71111.14)

a. Inspection Scope

The inspectors reviewed station personnel preparations and operator performance for a reactor down-power to about 94 percent for turbine testing. This review was to determine if personnel actions were appropriate to the evolution and in accordance with procedures and training. Additionally, the inspectors reviewed conditions and circumstances surrounding Control Rod 4-7 failing to transfer from the auxiliary control bus to the normal control bus.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following operability evaluations affecting mitigating systems and barrier integrity. The reviews considered whether the evaluations were technically justified, the adequacy and functionality of any compensatory measures, and any degradations that might cause a loss of function as described in the Updated Safety Analysis Report (USAR) or Technical Specifications (TS).

- High Voltage Switchgear Room Ventilation
- High Energy Line Break evaluations

b. Findings

No findings of significance were identified.

1R16 Operator Work-arounds (71111.16)

a. Inspection Scope

The inspectors reviewed operator work-arounds individually by reviewing documentation and interviewing station personnel to identify any potential effects on the functionality of mitigating systems or the ability of operators to implement abnormal or emergency operating procedures. Operator work-arounds reviewed were: Intake Canal Temperature failed low, Diesel Fire Pump Day Tank fill valve must be opened, and weekly drain of AFW pump turbine.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors verified that the post-maintenance test procedures and test activities were adequate to verify system operability and functional capability for the following risk significant activities:

- Outage activities for #2 Decay Heat Removal System/Low Pressure Injection System
- Maintenance activities for Valve DH-7A
- Outage activities for #2 Auxiliary Feedwater System
- Outage activities for #2 Auxiliary Feedwater Pump Governor Valve maintenance

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed the following surveillance test and reviewed applicable test data, to verify that the subject risk-significant system was capable of performing the intended safety function. The inspectors conducted reviews of TS, USAR, and licensee procedure requirements and evaluated the test for potential preconditioning, effects on plant risk, clear and adequate acceptance criteria, operator procedural adherence, test data completeness, test frequency, test equipment range and accuracy, and post-test equipment restoration:

- Auxiliary Feedwater Pump #2 Quarterly Functional Test

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the following temporary modification to verify it did not affect the safety functions of important safety systems. The inspectors reviewed the temporary modification and the associated 10 CFR 50.59 screening against the system design basis documentation, including the USAR and TS to determine if there was any effect on system operability or availability and to verify temporary modification consistency with plant documentation and procedures for Air Circuit Breaker ACB34562.

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES (OA)**

4OA1 Performance Indicator Verification (Inspection Procedure 71151)

a. Inspection Scope

The inspectors reviewed Licensee Event Reports and unit log entries to determine if the performance indicators for low pressure injection, high pressure injection and reactor coolant system leakage were accurately and completely reported to the NRC by the licensee. The previous 12 months of data (September 2000 - August 2001) were inspected.

b. Findings

No findings of significance were identified.

4OA6 Exit Meeting

The inspectors presented the inspection results to Mr. Bergendahl and other members of licensee management at the conclusion of the inspections on October 10, 2001. The licensee acknowledged the findings presented. No proprietary information was identified.

## KEY POINTS OF CONTACT

### Licensee

G. Campbell, Site Vice President  
H. Bergendahl, Plant Manager\*  
C. Ackerman, Supervisor, NQA\*  
A. Bless, Assistant Engineer, Regulatory Affairs\*  
J. Bourdo, Human Resources Manager\*  
T. Chambers, Assistant to Vice President\*  
S. Coakley, Outage Manager\*  
R. Cook, Compliance Engineer\*  
L. Dohrmann, Manager, Quality Services\*  
D. Eschelmann, Manager, Plant Engineering\*  
D. Imlay, Supervisor, Operations Training\*  
P. McCloskey, Manager, Chemistry\*  
J. Messina, Director, Work Manager\*  
J. Michaelis, Manager, Supply Chain\*  
D. Miller, Supervisor, Compliance\*  
C. Price, Manager, Business Services\*  
J. Reddington, Supervisor, Work Management Oversight\*  
P. Schultz, Radiation Protection Manager\*  
G. Skeel, Security Manager  
H. Stevens, Manager, QA\*  
M. Stevens, Maintenance Manager\*  
T. Swim, Supervisor, Design Basis Engineering\*

### NRC

C. Lipa, Branch Chief\*  
K. Zellers, Senior Resident Inspector  
D. Simpkins, Resident Inspector\*

\*Indicates personnel present at the exit meeting.

## LIST OF ITEMS OPENED AND CLOSED

### Opened

None.

### Closed

None.

## LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
CFR	Code of Federal Regulations
CR	Condition Report
DRP	Division of Reactor Projects
IN	Information Notice
MWO	Maintenance Work Order
NRC	Nuclear Regulatory Commission
OA	Other Activities
OS	Operations Schematic
P&ID	Piping and Instrumentation Drawing
SD	System Description
SDP	Significance Determination Process
SSC	Systems, Structures, and Components
TM	Temporary Modification
TS	Technical Specifications
USAR	Updated Safety Analysis Report

## LIST OF DOCUMENTS REVIEWED

### **1R04 Equipment Alignments**

SD-015	Auxiliary Feedwater System	Rev. 2
USAR Section 1.2.8.2.9	Auxiliary Feedwater System	Rev. 21
USAR Section 10.4.7.2	Auxiliary Feedwater System	Rev. 21
P&ID M-006D	Auxiliary Feedwater System	Rev. 46
OS-017A	Auxiliary Feedwater System	Rev. 16
OS-017B	Auxiliary Feedwater Pumps and Turbines	Rev. 17

### **1R05 Fire Protection**

	Pre-Fire Plan	
	Fire Hazards Analysis Report	Rev. 14
Drawings A221F-A226F	Fire Protection General Floor Plan	
Toledo Edison Letter to NRC Serial No. 815, "Appendix R Request for Control Room & Component Cooling Water Room", dated April 29, 1982		
NRC Letter to Toledo Edison "Safety Evaluation of Fire Protection Measures at the Davis-Besse Nuclear Power Station," dated May 30, 1991		
NRC Letter to Toledo Edison "Exemption to 10CFR 50, Appendix R, Section III.G & III.J, dated April 18, 1990		
NRC Information Notice 2001-04: Neglected Fire Extinguisher Maintenance Causes Fatality, dated April 11, 2001		
NRC Regulatory Guide 1.189: Fire Protection for Operating Nuclear Power Plants		

### **1R06 Flood Control Measures**

USAR Section 3.4	Water Level (Flood) Design Criteria	
USAR Section 3.6	Protection Against Dynamic and Environmental Effects Associated With Postulated Rupture of Piping	
NRC Information Notice 2000- 0020	Potential Loss of Redundant Safety-Related Equipment Because of the Lack of High-Energy Line Break Barriers	December 11, 2000

Operating Experience Review for IN 2000-20	Potential Loss of Redundant Loss of Redundant Safety Related Equipment Because of the Lack of High-Energy Line Break Barriers	
CR 01-2019	Initial Results of Investigation into NRC Information Notice 2000-20	
USAR Section 3.6	Protection Against Dynamic and Environmental Effects Associated with Postulated Rupture of Piping	
Branch Technical Position MEB 3-1 of NUREG-0800	USNRC Standard Review Plan Section 3.6.2	Rev. 2
NUREG -0136	Safety Evaluation Report related to operation of Davis-Besse Nuclear Power Station Unit 1	December 1976
NUREG 0136, S1	Supplement No. 1 to the Safety Evaluation Report by the Office of Nuclear Reactor Regulation United States Nuclear Regulatory Commission in the matter of Toledo Edison Company and Cleveland Electric Illuminating Company Davis Besse Nuclear Power Station Unit 1 Docket 50-346	April 1977
NUREG-1177	Safety Evaluation Report related to the restart of Davis-Besse Nuclear Power Station, Unit 1, following the event of June 9, 1985	June 1986

**1R11 Licensed Operator Requalification**

DB-OP-00000	Conduct of Operations	Rev. 4
DB-OP-01200	Reactor Coolant System Leakage Management	Rev. 3
DB-OP-02000	RPS, SFAS, RCS Trip or SC Tube Rupture	Rev. 6
DB-OP-02513	Pressurizer System Abnormal Operations	Rev. 3
	Drill Scenario	
	Licensed Operator Training Schedule	

**1R12 Maintenance Rule Implementation**

	1st and 2nd Quarter 2001 Davis-Besse System Health Reports	
CR 00-4135	Test Results for New Diesel Fuel for SBODG	
CR 01-0135	Equipment Restored After Maintenance Did Not Function Properly	
	Maintenance Rule Program Manual	Rev. 5
CR 00-2541	SBODG Soakback Pump Difficulties	

- CR 01-1743 Handwheels for SW Valves for CACS  
Maintenance Work Orders
- CR 01-2182 Bench Testing SW3963 Relief Valve During 13 RFO
- CR 01-0626 Procedure Deficiency in DP-op-02523 Component Cooling Water Malfunctions
- CR 01-0350 Inadequate Design of Service Water Header Relief Valves
- CR 00-1358 Alphanumeric Display on SAC2 Failed
- CR 01-1012 SAC#1 Additional Unavailability Due to Breaker BE309
- CR 01-0049 SAC#1 Would Not Start or Stop Properly
- CR 01-1657 BE309 Racking to Support Run of SAC#1
- CR 01-2242 SBODG and EDG Operability with One Air Start Side OOS
- CR 01-1953 EDG Air Start System Recommendation from SR-01-ENGRG-09
- CR 01-1794 #1 EDG Failed to Fast Start on the DA30 Air Start Side During Retest
- CR 01-1795 EDG Air Start System
- CR 01-1547 MS106 Failed to Stroke Open from Control Room Switch HIS106A
- CR 01-1519 EDG1 Hydromotor did not Energize on Fan Start
- CR 01-1082 Diesel Air Start Check Valve

Unit Logs

**1R13 Maintenance Risk Assessment and Emergent Work Evaluation**

Key Work Activities and Surveillances

Davis-Besse Weekly Maintenance Risk Summary Daily Review

- NG-DB-0001 Risk Significant Component Matrix Safety Monitor

Rev. 0

Unit Logs

- CR 00-4011 Rod 4-7 Did Not Transfer
- CR 01-2199 Rod 4-7 Failed to Transfer Back to Normal Power Supply

**1R14 Performance in Non-Routine Evolutions**

- CR 00-4011 Rod 4-7 Did Not Transfer
- CR 01-2199 Rod 4-7 Failed to Transfer Back to Normal Power Supply

**1R15 Operability Evaluations**

OJ 01-0015	Operability Justification for CR 01-2158	
CR 01-2158	High Voltage Switchgear Room Temperature Concerns	
OJ 01-0016	Operability Justification for CR 01-2019	
CR 01-2019	Initial Results of Investigation into NRC Information Notice 2000-20	

**1R16 Operator Work-Arounds**

Operator Work-Arounds Log

**1R19 Post-Maintenance Testing**

	Maintenance Work Orders for the Auxiliary Feedwater System	
DB-PF-03978	SG 2 Aux Feedwater Inlet Check Valve Reverse Flow Test - AF43	Rev. 1
DB-PF-03162	Check Valve AF68 Reverse and Forward Flow Test	Rev. 2
DB-SP-03160	AFP2 Quarterly Test	Rev. 3
DB-SP-03161	AFW Train 2 Level Control, Interlock and Flow Transmitter Test	Rev. 6
DB-SP-03162	Auxiliary Feedwater Train 2 Monthly Valve Verification	Rev. 1
	Maintenance Work Orders for the ECCS System	
DB-CH-03004	Borated Water Storage Tank Analysis	Rev. 7
DB-PF-03206	ECCS Valves Train 2 Quarterly Test	Rev. 2
DB-SP-03137	Decay Heat Pump 2 Quarterly Pump and Valve Test	Rev. 3

**1R22 Surveillance Testing**

DB-SP-03160	AFP2 Quarterly Test	Rev. 3
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**1R23 Temporary Plant Modifications**

TM 01-0012	Connect ACB 34562 air compressor bottle to ACB 34561 2000psi Bottle	
CR 01-2164	Warm Contact Noted on 34562F Motor Operated Disconnect	
USAR 8.2	Offsite Power System	Rev. 22
USAR 1.2.5	Electrical Systems and Emergency Power	Rev. 21

**40A1 Performance Indicator Verification**

Key Work Activities and Surveillances

1st and 2nd Quarter 2001 Davis-Besse System Health Reports

2000 Davis-Besse System Health Reports

Unit Logs