

June 6, 2001

EA-00-183

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 50-346/01-09 (DRP)

Dear Mr. Campbell:

On May 16, 2001, the NRC completed an inspection at your Davis-Besse Nuclear Power Station. The enclosed report documents the inspection findings which were discussed on May 16, 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. Specifically, this inspection focused on the licensee's access control program, radiological effluent monitoring program, radiological waste transportation program, and routine resident inspection activities.

No findings of significance were identified.

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Sincerely,

***/RA by Laura Collins Acting for/***

Thomas J. Kozak, Chief  
Branch 4  
Division of Reactor Projects

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

Enclosure: Inspection Report 50-346/01-09

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G. Campbell

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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

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  
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-346/01-09(DRP)

Licensee: FirstEnergy Nuclear Operating Company

Facility: Davis-Besse Nuclear Power Station

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

Dates: April 1 through May 16, 2001

Inspector: Kevin S. Zellers, Senior Resident Inspector  
John E. House, Senior Radiation Specialist  
Joe Larizza, Resident Inspector, Fermi  
Doug Simpkins, Resident Inspector

Approved by: Thomas J. Kozak, Chief  
Branch 4  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000346-01-09(DRP), on 04/01-05/16/2001, FirstEnergy Nuclear Operating Company, Davis-Besse Nuclear Power Station. Integrated Inspection Report.

This inspection was conducted by resident inspectors and a regional radiation specialist. One No Color finding was identified which involved a Non-Cited violation. 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 was at 100 percent power throughout the inspection period except for brief periods of time at about 93 percent power to perform routine testing activities.

#### **1. REACTOR SAFETY**

##### 1R04 Equipment Alignment (Inspection Procedure 71111.04)

###### a. Inspection Scope

The inspectors conducted partial walk-down inspections by comparing station configuration control documentation with actual system/train lineups on the #1 auxiliary feedwater train and the motor driven feedwater pump, during a #2 auxiliary feedwater train outage. Documents reviewed were DB-OP-06233 (Auxiliary Feedwater System), DB-OP-06225 (Motor Driven Feedwater Pump Operating Procedure), Operations Schematic (OS)-12A, OS-17A, and OS-17B.

###### b. Findings

No findings of significance were identified.

##### 1R13 Maintenance Risk Assessment and Emergent Work Evaluation (Inspection Procedure 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 Drive Circuit Breaker testing (document reviewed: the weekly risk summary for April 9, 2001)
- #1 Service Water Pump Motor Outage (documents reviewed: weekly risk summary for April 16, 2001, Key Work Activities and Surveillances for Week of April 16, 2001, and the Administrative Work Process Guideline Manual)
- #2 Auxiliary Feedwater outage (document reviewed: the weekly risk summary for April 9, 2001)

###### b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (Inspection Procedure 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 (TSs).

- Emergency Diesel Generator (EDG) Air Start System Check Valve DA-231 (documents reviewed: Condition Report (CR) 01-1082, OS-41B, System Description 003B (Emergency Diesel Generator), DB-OP-06316 (Diesel Generator Operating Procedure), USAR Section 8.3.1.1.4), TS 3.8.1.1)
- Containment Isolation Valve CF-1544 Leakage (documents reviewed: CR-01-0922, Operability Justification 2001-0009, OS-006, DB-OP-02003 (ECCS Alarm Panel 3 Annunciators), TSs 3.5.1, 4.5.1, 3.6.1.2 and 3.6.3.1)

1R19 Post-Maintenance Testing (Inspection Procedure 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:

- Circuit Breaker AACD1 (transformer AC to bus D1 feeder circuit breaker) refurbishment (documents reviewed: unit log for 5/1/01, DB-OP-01000 (Operation of Station Breakers), DB-ME-09104 (13.8 KV and 4.15 KV Westinghouse DHP Breakers), and DB-OP-06315 (4160 Volt Switching Procedure) performed on 5/1/01)
- #2 AFW Train Governor and Pump Lubrication Preventive Maintenance (document reviewed: MWO-00-004834-000 (Lubricate the #2 Auxiliary Feed Pump Turbine, Governor, Governor Drive and Linkages))
- EDG Output Circuit Breaker AD101 refurbishment (documents reviewed: Maintenance Work Order (MWO)-00-000970-049, DB-OP-01000 (Operation of Station Breakers), DB-ME-09104 (13.8 KV and 4.15 KV Westinghouse DHP Breakers))

1R22 Surveillance Testing (Inspection Procedure 71111.22)

a. Inspection Scope

The inspectors verified by witnessing the following surveillance tests and/or reviewing the test data; that the subject risk-significant SSCs met TS, updated safety analysis report, and licensee procedure requirements; and demonstrated that the SSCs were



capable of performing their intended safety functions. The inspectors evaluated the following tests for preconditioning, effect of the test 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:

- Control Rod Drive Circuit Breaker/Reactor Protection System (RPS) Testing (document reviewed: DB-MI-03012 (Channel Functional Test of Reactor Trip Breaker A, RPS Channel 2 Reactor Trip Module Logic, and ARTS Channel 2 Output Logic))
- #2 EDG 184-Day Test (document reviewed: DB-SC-03077 (EDG 2 184-Day Test performed on 4/12/01))

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS1 Access Control

.1 Plant Walkdowns, Radiological Boundary Verifications, and Radiation Work Permit Reviews (71121.01)

a. Inspection Scope

The inspector conducted walkdowns of the radiologically restricted area to verify the adequacy of radiological boundaries and postings. Specifically, the inspector walked down several high and locked high radiation area boundaries in the Auxiliary Building. Confirmatory radiation measurements were taken to verify that these areas and selected radiation areas were properly posted and controlled in accordance with 10 CFR Part 20, licensee procedures and Technical Specifications (TSs). Radiation work permits for tours and a spent resin sluice evolution were reviewed for protective clothing requirements and dosimetry requirements including alarm set points. The inspector also observed radiation protection preparations for the resin sluice including pre-job briefings, boundary controls, and radiation monitoring locations.

b. Findings

No findings of significance were identified.

## **Cornerstone: Public Radiation Safety**

### 2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

#### .1 Offsite Dose Calculation Manual (ODCM) (71122.01)

##### a. Inspection Scope

The inspector reviewed the 1999 Annual Radiological Environmental Operating Report to verify that the radiological effluent program was implemented as described in the Updated Safety Analysis Report (USAR) and the Offsite Dose Calculation Manual (ODCM). The inspector reviewed the report for significant changes to the ODCM and to the design and operation of the radioactive waste processing system.

##### b. Findings

No findings of significance were identified.

#### .2 Gaseous and Liquid Release Systems Walkdowns (71122.01)

##### a. Inspection Scope

The inspector performed walkdowns of the major components of the gaseous and liquid release systems to verify that the current system configuration was as described in the USAR and the ODCM, and to observe ongoing activities and equipment material condition. This included radiation and flow monitors, demineralizers and filtration systems, compressors, tanks, and vessels. The inspector also discussed the waste processing system including operations and components with the cognizant system engineer.

##### b. Findings

No findings of significance were identified.

#### .3 Gaseous and Liquid Releases (71122.01)

##### a. Inspection Scope

The inspector reviewed liquid and gaseous radioactive waste (radwaste) release records to verify that appropriate treatment equipment was used and that the radwaste effluents were processed and released in accordance with the ODCM. The inspector also observed the collection of a liquid radwaste sample from the miscellaneous waste monitor tank to verify that the sample had been collected in compliance with station procedures.

##### b. Findings

No findings of significance were identified.

.4 Changes to the ODCM (71122.01)

a. Inspection Scope

The inspector reviewed changes made by the licensee to the ODCM as well as to the liquid and gaseous radioactive waste processing system design, procedures, or operation since the last inspection to verify that the changes were documented in accordance with the requirements of the ODCM and the TSs.

b. Findings

No findings of significance were identified.

.5 Dose Calculations (71122.01)

a. Inspection Scope

The inspector reviewed the 1999 annual dose calculations and a selection of year 2000 monthly dose calculations to ensure that the licensee had properly calculated the offsite dose to the public from radiological effluent releases, and to determine if any annual TS or ODCM (i.e., Appendix I to 10 CFR Part 50 values) limits were exceeded.

b. Findings

No findings of significance were identified.

.6 Air Cleaning Systems (71122.01)

a. Inspection Scope

The inspector reviewed air cleaning system surveillance test results to ensure that test results were within the licensee's acceptance criteria. The inspector reviewed surveillance test results for the station vent flow to verify that the flow rates were consistent with USAR values.

b. Findings

No findings of significance were identified.

.7 Effluent Monitor Calibrations (71122.01)

a. Inspection Scope

The inspector reviewed records of instrument calibrations performed since the last inspection for effluent radiation monitors. The inspector also reviewed the current effluent radiation monitor alarm setpoint values for agreement with station requirements.

b. Findings

No findings of significance were identified.

.8 Counting Room Instrument Calibrations and Quality Control (71122.01)

a. Inspection Scope

The inspector reviewed the quality control records for radiochemistry instrumentation used to identify and quantitate radioisotopes in effluents, in order to verify that the instrumentation was calibrated and maintained as required by site procedures. This review included calibrations of gamma spectroscopy/spectrometry systems, liquid scintillation instruments, and associated instrument control charts.

b. Findings

No findings of significance were identified.

.9 Interlaboratory Comparison Program (71122.01)

a. Inspection Scope

The inspector reviewed the results of the 1999 and 2000 Interlaboratory Comparison Program in order to assess the quality of radioactive effluent sample analyses performed by the licensee. The inspector reviewed the licensee's quality control evaluation of the Interlaboratory comparison program and associated corrective actions for any deficiencies identified.

b. Findings

No findings of significance were identified.

.10 Identification and Resolution of Problems (71122.01)

a. Inspection Scope

The inspector reviewed audits and self-assessments conducted during the previous year to evaluate the effectiveness of the licensee's self-assessment process in the identification, characterization, and prioritization of problems, and to verify that previous radiological instrumentation related issues were adequately addressed. Condition reports written during the previous year that addressed radioactive treatment and monitoring program deficiencies were also reviewed to verify that the licensee had effectively implemented the corrective action program.

b. Findings

No findings of significance were identified.

## 2PS2 Radioactive Material Processing and Transportation

### .1 Shipment Preparation (71122.02)

#### a. Inspection Scope

The inspector observed the preparation of a shipment (exclusive use vehicle) including loading of radioactive packages onto the transport vehicle, licensee surveys of the vehicle and packages, labeling, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers, and licensee verification of shipment readiness. The inspector also performed a confirmatory radiation survey of the loaded vehicle including the cab area and shipping containers, to verify that the shipment complied with the radiological requirements of the NRC and the Department of Transportation.

#### b. Findings

No findings of significance were identified.

## 4OA5 Other

### .1 Violation of 10 CFR 50.7 "Employee Protection" (EA-00-183)

On March 29, 2001, the NRC issued Enforcement Action (EA) No. 00-183 relating to a violation of 10 CFR 50.7 that occurred on July 19, 1999, at the licensee's facility. Specifically, the NRC concluded that a Perry Nuclear Power Plant Radiation Protection Department employee was discriminated against when the employee's name was used during a training session at Davis-Besse on employee engagement in protected activities. During the training session, specific examples of violations were discussed including one in which the employee's name was used in connection with his engagement in protected activities. Based on the corrective actions taken by the licensee and the fact that the violation was not deliberate, the NRC categorized this matter as a non-cited violation **(NCV 50-346/01-09-01.)**

### .2 Technical Skills Accreditation Report

The inspectors reviewed an INPO Accreditation Evaluation Report dated March 2001 for the following training programs: Instrument and Control Technician and Supervisor, Electrical Maintenance Personnel and Supervisor, Mechanical Maintenance Personnel and Supervisor, Chemistry Technician, Radiological Protection Technician, and Engineering Support Personnel.

4OA6 Meeting(s)

Exit Meeting

The inspector presented the inspection results to Mr. Bergendahl and other members of licensee management at the conclusion of the inspection on May 19, 2001. The licensee acknowledged the findings presented. No proprietary information was identified.

Senior Official at Exit: Mr. Guy Campbell, Site Vice President  
Date: April 6, 2001  
Proprietary: No  
Subject: Radiological Effluents, Transportation, and Access Control  
Change to Inspection Findings: No

Exit Meeting

The inspector presented the inspection results to Mr. Campbell and other members of licensee management at the conclusion of the inspection on May 16, 2001. The licensee acknowledged the findings presented. No proprietary information was identified.

Senior Official at Exit: Mr. Guy Campbell, Site Vice President  
Date: May 16, 2001  
Proprietary (explain "yes"): No  
Subject: Routine Resident Inspection  
Change to Inspection Findings: No

## KEY POINTS OF CONTACT

### Licensee

H. Bergendahl, Plant Manager  
L. Bonker, Health Physics Services Supervisor  
G. Campbell, Site Vice President  
R. Coad, Operations Manager  
B. Geddes, Chemistry Supervisor  
R. Greenwood, Health Physics Services Supervisor  
P. Shultz, Radiation Protection Manager  
J. Dominy, Project Manager, Maintenance  
C. Gale, Senior Engineer, Plant Engineering

## LIST OF ITEMS OPENED CLOSED AND DISCUSSED

### Opened and Closed

50-346/01-09-01      NCV      Violation of 10 CFR 50.7 "Employee Protection" (Section 40A5.1)

## LIST OF ACRONYMS

ALARA	As Low As Is Reasonably Achievable
ARTS	Anticipatory Reactor Trip System
CFR	Code of Federal Regulations
CR	Condition Report
DRS	Division of Reactor Safety
MWO	Maintenance Work Order
NRC	Nuclear Regulatory Commission
OA	Other Activities
ODCM	Offsite Dose Calculation Manual
OS	Operations Schematic
Radwaste	Radioactive Waste
RPS	Reactor Protection System
RWP	Radiation Work Permit
TS	Technical Specification
USAR	Updated Safety Analysis Report



## LIST OF DOCUMENTS REVIEWED

### 2PS1 Radiological Effluents

CR-001714	Containment Purge Iodine Detector	June 29, 2000
CR-001794	RE 4686 Inoperable	July 17, 2000
CR-010351	Containment Post Accident High Range Monitor	February 5, 2001
CR-010540	Dose Calculations for PASS Samples	February 23, 2001
CR-010625	Lock Not Secure On RRA Entrance	March 2, 2001
CR-010854	Radwaste Exhaust System Radiation Monitor	March 24, 2001
CR-010962	Miscellaneous Waste Outlet Rad Monitor Inoperable	April 3, 2001
DB-CH-0013	Radiochemistry Quality Control Program	November 15, 1999
DBP-6027A	Off Site Dose Calculation Manual	January 19, 2001
DB-1999	Annual Radiological Environmental Operating Report	April 2000
OP-03012	Radioactive Gas Batch Release	February 7, 2001
01-011	Radioactive Liquid Batch Release Package	March 21, 2001
01-012	Radioactive Liquid Batch Release Package	March 28, 2001
DB-CH-13	Interlab Comparisons: 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , and 4 <sup>th</sup> Qtrs.	1999
DB-CH-13	Interlab Comparisons: 1 <sup>st</sup> , 2 <sup>nd</sup> , and 3 <sup>rd</sup> Qtrs.	2000
DB-HP-03001	Liquid and Gaseous Radioactive Dose Commitment	January 29, 2001

### 2PS2 Radioactive Material Processing and Transportation

TR01-0002	Uniform Low Level Radwaste Shipping Manifest	April 3, 2001
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