

November 20, 2000

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 50-346/00-14(DRP)

Dear Mr. Campbell:

On November 16, 2000, the NRC completed an inspection at your Davis-Besse reactor facility. The enclosed report documents the inspection results which were discussed on November 14, 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.

No findings of significance were identified.

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
Thomas J. Kozak

Thomas J. Kozak, Chief
Reactor Projects Branch 4

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

Enclosure: Inspection Report 50-346/00-14(DRP)

See Attached Distribution

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Sincerely,

/s/Thomas J. Kozak

Thomas J. Kozak, Chief
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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-346/00-14(DRP)

Licensee: FirstEnergy Nuclear Operating Company

Facility: Davis-Besse Nuclear Power Station

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

Dates: October 1 - November 16, 2000

Inspectors: K. Zellers, Senior Resident Inspector
D. Simpkins, Resident Inspector

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

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

Radiation Safety

- Occupational
- Public

Safeguards

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

SUMMARY OF FINDINGS

IR 50-346-00-14, on 10/01-11/16/2000; FirstEnergy Nuclear Operating Company; Davis-Besse Nuclear Power Station; resident inspector report.

The inspection was conducted by resident inspectors. No findings were identified.

Report Details

Summary of Plant Status: The plant was operated at about 100 percent power throughout the inspection period, except for brief down powers to about 93 percent power for 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 following trains of equipment to verify the system/train was operable when a redundant system/train was out-of-service:

- Decay Heat System train #1 during an outage of Decay Heat System train #2 (documents reviewed: unit log, test completion log, Davis-Besse Material Condition Report, Operations Schematics (OS) OS-003-004, Piping and Instrumentation Diagrams (P&ID) M-033 A-C, Updated Safety Analysis Report (USAR) Section 6.3 and Technical Specification (TS) 3.5.2).
- Auxiliary Feedwater (AFW) System #1 during an outage of AFW System #2 (documents reviewed: unit log, test completion log, Davis-Besse Material Condition Report, OS-017 A-C, M-006 D, USAR Sections 3.6, 9.2, 10.3, 10.4 and 15.2, and TS sections 3.7.1.2, 3.7.1.3, 3.7.1.7, 3.8.1, and 8.3)
- Emergency Diesel Generator (EDG) #1 and Station Blackout Diesel Generator (SBODG) during an outage of EDG #2 (documents reviewed: unit log, and OS-41A, F)

The inspectors conducted a complete walk-down inspection of the AFW System, a risk-important mitigating system, after considering the station Updated Probabilistic Safety Assessment, plant mode, and previous walk-downs. Items that were inspected were: correct system lineup in accordance with configuration control documentation; appropriateness of related operating, abnormal and emergency procedures; compliance with the updated final safety analysis report and vendor manual recommendations; outstanding material deficiencies and their effect on system operability; outstanding design issues including temporary modifications; any operator work-arounds; and items tracked by the engineering department. Documents reviewed were OS-017A, OS-017B, M-006D, USAR Sections 3.6, 9.2, 10.3, 10.4, and 15.2, DB-OP-2000 and sixty-two (62) work orders for the AFW System.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (Inspection Procedure 71111.05)

a. Inspection Scope

The inspectors verified fire protection program implementation by reviewing equipment status and lineup, control of transient combustibles and ignition sources, condition of fire detection systems, fire suppression systems, manual fire fighting equipment, passive fire protection features and compensatory measures. The inspectors walked down the following areas: condenser bay, main feedwater pump room, condensate pump room, AFW pump rooms, EDG rooms, high voltage switchgear rooms, auxiliary boiler room, turbine pedestal area, low voltage switchgear rooms, turbine plant cooling water area, isophase bus area and station battery rooms. Documents reviewed were the Pre-Fire Plan, the Fire Hazards Analysis Report, and Fire Protection Drawings A222F-A224F.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (Inspection Procedure 71111.06)

a. Inspection Scope

The inspectors verified the licensee's flooding mitigation plans and equipment were consistent with the licensee's 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. Documents reviewed were HS-EP-02830 (Flooding), RA-EP-2880 (Internal Flooding), USAR sections 2.4, 3.4, and 3.6, and Condition Reports (CRs) 1999-1326, 2000-1307, -1791, -1907, -1920 and -2459.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (Inspection Procedure 71111.11)

a. Inspection Scope

The inspectors observed risk-important licensed operator actions and emergency plan implementation for simulator scenarios to identify deficiencies and discrepancies in the training, and to assess operator performance and evaluator critiques. These observations included steam generator tube leaks and ruptures with equipment problems and radioactive releases to the environment. Documents reviewed were the drill scenario, licensed operator training schedule and DB-OP-2000.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (Inspection Procedure 71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the maintenance rule requirements, including a review of scope, goal setting, and performance monitoring, short-term and long-term corrective actions, and current equipment performance status, for the following components and systems that have had performance problems:

- SBODG Lube Oil System (documents reviewed: Maintenance Rule Program Manual, DB-OP-06334 (SBODG Operating Procedure), OS-41, SD-003B, CR 2000-2449, CR 2000-2450, and the USAR)

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (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:

- Main Feedwater Startup Valve #1 Solenoid Valve Replacement (documents reviewed: night order log sheet for October 6, 2000, Key Work Activities for week of 10/09/00, unit log for October 9, 2000, CR 2000-2344, Work Week Schedule for October 8-14, 2000, Davis-Besse Weekly Maintenance Risk Summary for October 9-15, 2000, and CR 2000-2476)
- Service Water Pump #3 and Dilution Pump outage (documents reviewed: unit log, Key Work Activities for week of 10/16/00, Work Week Schedule for 10/16/00, Davis-Besse Weekly Maintenance Risk Summary for the week of 10/16/00 revisions 1, 2 and 3, and the Davis-Besse Probabilistic Risk Assessment)
- SBODG outage for emergent work on soakback pump (documents reviewed: unit log, Key Work Activities for week of 10/23/00, Work Week Schedule for 10/23/00, and the Davis-Besse Weekly Maintenance Risk Summary for the week of 10/23/00)
- Decay Heat Pump #2 outage (documents reviewed: unit log, Key Work Activities for week of 10/23/00, Work Week Schedule for 10/23/00, and the Davis-Besse Weekly Maintenance Risk Summary for the week of 10/23/00)

- EDG #2 outage (documents reviewed: unit log, Key Work Activities for week of 10/23/00, Work Week Schedule for 10/23/00, and the Davis-Besse Weekly Maintenance Risk Summary for the week of 10/23/00)

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (Inspection Procedure 71111.16)

a. Inspection Scope

The inspectors reviewed operator work-arounds to identify any potential effects on the functionality of mitigating systems. The operator workarounds were inspected to determine if the functional capability of the system or the ability of operators to implement abnormal or emergency operating procedures was effected. Operator workarounds reviewed were operator weekly checks of AFW steam admission valve leakage and control room actions to ensure circulating water to turbine plant cooling water cross-connect valve remains open. Documents reviewed were WPG-2 (Work Process Guideline - Operations Equipment Issues), CR 2000-2613, and the active operator workaround log.

b. Findings

No findings of significance were identified.

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 systems:

- SBODG soak-back pump maintenance (document reviewed: DB-OP-06334, (SBODG Operating Procedure), and MWOs 00-4730-00, and 00-4765-00)
- Decay Heat Pump #2 outage (documents reviewed: Work Week Schedule for the week of 10/22/00, DB-SP-3350 (DH/LPI Pump Train 1 and 2 Monthly Checks), DB-SP-3137 (DH/LPI Train 2 Quarterly Test), and stroke testing results for DH-7A, DH-13A and -14A)
- EDG #2 outage, (documents reviewed: Work Week Schedule for October 22-28, and DB-SC-03077 (#2 EDG 184 Day Test))

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (Inspection Procedure 71111.22)

a. Inspection Scope

The inspectors witnessed the following surveillance tests and/or reviewed the test data to verify that the subject risk-significant SSCs met Technical Specifications, the updated safety analysis report, and licensee procedure requirements. The inspectors evaluated the 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.

- Safety Features Actuation System (SFAS) Channel Functional Test (documents reviewed: DB-SC-3112 (SFAS Channel 3 Functional Test), CR 2000-2538, and the USAR)
- SFAS Channel Calibration Test (documents reviewed: DB-SC-3112 (SFAS Channel 3 Functional Test), and the USAR)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (Inspection Procedure 71111.23)

a. Inspection Scope

The inspectors reviewed the following temporary modifications to verify that they did not affect the safety functions of important safety systems. The inspectors reviewed the associated 10 CFR 50.59 screening against the system design basis documentation, including the Updated Safety Analysis Report and Technical Specifications to verify that the modifications did not affect system operability/availability. The inspectors also verified the temporary modification was consistent with plant documentation and procedures.

- Temporary Modification 99-0018, which replaced Service Water Pump #3 strainer with a spool piece during repairs on the strainer (documents reviewed: unit log, MWO-98-000593-000, Safety Evaluation, 00-0032/R2, USAR, Technical Specifications, OS-20, DB-OP-06261, and DB-OP-02511)

b. Findings

No findings of significance were identified.

OTHER ACTIVITIES (OA)

4OA6 Management Meeting

The inspectors presented the inspection results to Mr. G. Campbell and other members of licensee management on November 14, 2000. The licensee acknowledged the findings presented. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. M. Andrews, Senior Engineer, Plant Engineering
G. R. Bartek, Senior Nuclear Engineer, Plant Engineering
J. M. Baldwin, Shift Supervisor, Plant Operations
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NRC

T. J. Kozak, Chief, Reactor Projects Branch 4
K. S. Zellers, Senior Resident Inspector, Davis-Besse
D. S. Simpkins, Resident Inspector, Davis-Besse

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
CFR	Code of Federal Regulations
CR	Condition Report
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
LER	Licensee Event Report
MDT	Maintenance Deficiency Tag
MWO	Maintenance Work Order
NRC	Nuclear Regulatory Commission
OS	Operations Schematic
RPS	Reactor Protection System
P&ID	Piping and Instrumentation Diagram
SBODG	Station Blackout Diesel Generator
SFAS	Safety Features Actuation System
SD	System Description
SG	Steam Generator
TI	Temporary Instruction
TS	Technical Specification
USAR	Updated Safety Analysis Report