

September 6, 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 - NRC INSPECTION REPORT 50-346/2000011(DRS)

Dear Mr. Campbell:

On August 11, 2000, the NRC completed a routine inspection at your Davis-Besse Nuclear Power Station. The results of this inspection were discussed on August 11, 2000, with Mr. P. Shultz and other members of your staff. The enclosed report presents the results of that inspection.

The inspection was an examination of activities conducted under your license as they relate to radiation protection and to compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel. Specifically, this inspection focused on occupational radiation safety, the radiological controls implemented for access to radiologically significant areas, and the calibration, operability, and testing of radiation monitoring instrumentation. Also, your performance indicator data collection and reporting process for the occupational radiation safety cornerstone was reviewed, along with a verification of selected performance indicators for the occupational radiation safety and reactor safety cornerstones.

Based on the results of this inspection, no findings 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).*

G. Campbell

-2-

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Gary L. Shear, Chief,
Plant Support Branch
Division of Reactor Safety

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

Enclosure: Inspection Report 50-346/2000011(DRS)

cc w/encl: B. Saunders, President - FENOC
H. Bergendahl, Plant Manager
D. Lockwood, Manager, Regulatory Affairs
M. O'Reilly, FirstEnergy
State Liaison Officer, State of Ohio
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: 50-346/2000011(DRS)

Licensee: FirstEnergy Nuclear Operating Company

Facility: Davis-Besse Nuclear Power Station

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

Dates: August 7-11, 2000

Inspector: John E. House, Senior Radiation Specialist

Approved by: Gary L. Shear, Chief
Plant Support Branch
Division of Reactor Safety

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	Radiation Safety	Safeguards
<ul style="list-style-type: none">● Initiating Events● Mitigating Systems● Barrier Integrity● Emergency Preparedness	<ul style="list-style-type: none">● Occupational● Public	<ul style="list-style-type: none">● 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 50-346/2000011(DRS); on 08/07-08/11/2000; FirstEnergy Nuclear Operating Company, Davis-Besse Nuclear Power Station. The inspection covered the following baseline activities: the occupational radiation safety program and performance indicators for the occupational radiation safety cornerstone and reactor coolant activity for the reactor safety cornerstone.

The inspection was conducted by a regional senior radiation specialist. This inspection identified no findings.

Report Details

Summary of Plant Status: The plant was at 100 percent power throughout the inspection period.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Controls for Radiologically Significant Areas

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

a. Inspection Scope

The inspector conducted walkdowns of the radiologically restricted area (RRA) to verify the adequacy of radiological area boundaries and postings including high and locked high radiation areas in the Auxiliary, Radwaste and Turbine Buildings. Confirmatory radiation measurements were taken to verify that these areas and selected radiation areas were properly posted and controlled in accordance with 10 CFR 20, licensee procedures and Technical Specifications. Radiation work permits (RWPs) for tours and a spent resin sluice evolution were reviewed for protective clothing requirements and dosimetry requirements including alarm setpoints.

b. Findings

There were no findings identified.

.2 Review of a Spent Resin Transfer Evolution

a. Inspection Scope

The inspector reviewed as low as is reasonably achievable (ALARA) plans, attended a pre-job briefing, verified electronic dosimeter alarm setpoints, performed a radiological survey and observed work activities for sluicing spent resin from the spent fuel pool demineralizer to the spent resin storage tank. The adequacy of surveys and radiological controls contained in RWP 2000-1028 was verified.

b. Findings

There were no findings identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspector reviewed the licensee's audits, surveillances, and the condition report (CR) database that related to radiation worker performance, work practices and high radiation area access controls covering the previous year. The inspector evaluated the effectiveness of the radiation protection self-assessment process to identify problems and trends, and to implement corrective actions.

b. Findings

There were no findings identified.

.4 Control of Non-Fuel Materials Stored in the Spent Fuel Pools

a. Inspection Scope

The inspector reviewed the licensee's programmatic controls and current practices for the control of highly activated or contaminated materials (non-fuel) stored within the spent fuel or other storage pools. The most recent inventory list was evaluated, radiation protection and chemistry staff were interviewed, and the refuel floor was observed in order to verify that controls for underwater storage of non-fuel materials were adequate.

b. Findings

There were no findings identified.

2OS3 Radiation Monitoring Instrumentation

.1 Source Tests and Calibration of Radiological Instrumentation

a. Inspection Scope

The inspector verified the accuracy and operability of radiation monitoring instruments used for the protection of radiation workers including:

- Area radiation monitors
- Continuous air monitors
- Portable survey meters
- Whole body counter
- Portal monitors
- Electronic dosimeters
- Tool monitors

The Updated Final Safety Analysis Report (UFSAR) and radiological survey forms were reviewed to identify area radiation monitor (ARM) and continuous air monitor (CAM) locations. The inspector walked down a statistically representative number of monitors

to determine that their locations were as described in licensee documents. The inspector reviewed the most recent calibration records for a large sample of the stations's ARMs and CAMs which included, but were not limited to, the following:

- Containment Vessel Monitors
- Decay Heat Cooler Room Monitors
- Mechanical Penetration Rooms Monitors
- Containment Air Monitors
- Spent Fuel Pool Air Exhaust Monitors
- Radwaste Exhaust Monitors
- Control Room Monitors

The inspector reviewed a statistical sample of current calibration records for the personnel contamination monitors (PCMs), portable radiation survey instruments, electronic dosimeters, whole body counter and tool monitors. The inspector observed the calibration process for portable survey instruments along with source tests for tool monitors, PCMs and survey instrumentation to verify compliance with procedures.

b. Findings

There were no findings identified.

.2 Problem Identification and Resolution

a. Inspection Scope

The inspector reviewed the licensee's audits, surveillances and the condition report data base for the previous 12 months covering radiological incidents involving personnel contamination events and radiological instrumentation. There were no radiation protection department licensee event reports, or internal exposures in excess of 100 millirem committed effective dose equivalent.

b. Findings

There were no findings identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification

.1 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspector verified the licensee's performance indicator (PI) for the occupational radiation safety cornerstone. The data review focused on selected CRs and radiological access control data for the previous 12 months. During plant walk-downs, the inspector

also verified that those areas that met the definition of locked high radiation areas were adequately secured.

b. Findings

There were no findings identified.

.2 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspector observed a chemistry technician obtain, prepare for analysis and analyze a reactor coolant sample. Dose equivalent iodine (DEI) concentrations in reactor coolant for the previous 12 months were also evaluated in order to verify the reactor coolant system activity performance indicator.

b. Findings

There were no findings identified.

40A5 Performance Indicator Data Collecting and Reporting Process Review (TI 2515/144)

a. Inspection Scope

The inspector evaluated the licensee's performance indicator data collection and reporting process to verify that the licensee had appropriately implemented the NRC/Industry guidance, as documented in Nuclear Energy Institute (NEI) 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guide." The evaluation consisted of interviews with licensee staff members responsible for data acquisition, verification and reporting. In addition, the following procedure was reviewed:

- NRC Performance Indicator Guideline, March 3, 2000

b. Findings

There were no findings identified.

40A6 Management Meetings

Exit Meeting Summary

The inspector presented the inspection results to Mr. P. Shultz and other members of licensee management at the conclusion of the inspection on August 11, 2000. The licensee acknowledged the findings presented. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

L. Bonker	Health Physics Services Supervisor
S. Brouwer	System Engineering
G. Campbell	Site Vice-President
R. Coad	Operations Manager
R. Greenwood	Health Physics Services Supervisor
J. Lash	Plant Manager
D. Lockwood	Manager, Regulatory Affairs
D. Miller	Senior Engineer-Compliance
S. Moffitt	Director Technical Services
R. Scott	Manager, Radiation Protection Assessment
J. Scott	Lead Nuclear Technologist
H. Stevens	Quality Assurance Manager
P. Shultz	Radiation Protection Manager
M. Travis	Radiation Protection Supervisor
G. Wolf	Regulatory Affairs
L. Worley	Director, Support Services

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ALARA	As Low As Is Reasonably Achievable
ARM	Area Radiation Monitor
CAM	Continuous Air Monitor
CFR	Code of Federal Regulations
CR	Condition Report
DEI	Dose Equivalent Iodine
DRS	Division of Reactor Safety
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OA	Other Activities
OS	Occupational Radiation Safety
PCM	Personnel Contamination Monitor
PI	Performance Indicator
RP	Radiation Protection
RRA	Radiologically Restricted Area
RWP	Radiation Work Permit
TI	Temporary Instruction
UFSAR	Updated Final Safety Analysis Report

PARTIAL LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort.

Assessments and Audits

Quality Assessment Surveillance Report, SR-00-RPRWP-01, July 24, 2000
Quality Assessment Surveillance Report, SR-99-RPRWP-03, August 3, 1999
Quality Assessment Audit Report, AR-00-OUTAG-01
Quality Assessment Audit Report, AR-99-RPRWC-01, May 14, 1999

Miscellaneous

Radiation Survey Form, Survey # 99-00038, Cask Fill Pit Clean Up
Calibration Forms for Selected Instruments
NRC Performance Indicator Guideline, March 3, 2000

Condition Reports

1999-0474, 1999-0805, 1999-0968, 1999-1015, 1999-1304, 1999-1359, 1999-1318, 1999-1592, 1999-1934, 2000-0323, 2000-0633, 2000-0695, 2000-0635, 2000-1592, 2000-1068, 2000-1203, 2000-1483, 2000-1952

Procedures/Calibration Records

DB-HP-01430, Revision 1, October 14, 1992, Extender Model 2000 Calibration
DB-HP-01432, Revision 0, June 7, 1993, ASP-1 Calibration and Use
DB-HP-01435, Revision 0, July 24, 1998, Calibration and Use of Bicron/NE SPM 904C
DB-HP-01438, Revision 1, May 10, 1994, Frisker Calibration
DB-HP-01439, Revision 0, August 19, 1996, Bicron Labtech
DB-HP-01440, Revision 2, October 16, 1992, Microrem Meter Calibration
DB-HP-01442, Revision 0, March 15, 1999, MGP Telepole Calibration and Use
DB-HP-01444, Revision 2, February 8, 1994, EC4-X Calibration and Use
DB-HP-01445, Revision 0, September 20, 1995, Dositec PR-2 Calibration
DB-HP-01447, Revision 1, October 8, 1999, Small Article Monitor Calibration
DB-HP-01452, Revision 3, October 17, 1997, Air Sampler Calibration
DB-HP-01453, Revision 4, November 17, 1992, Continuous Particulate Air Monitor
AMS-3 Calibration and Use
DB-HP-01702, Revision 4, Irradiated Metals Storage Inventory
DB-OP-00016, Revision 2, August 7, 2000, Spent Resin to Spent Resin Storage Tank
DB-MI-04527, Revision 1, April 19, 1999, String Check of GM Tube Area Radiation Monitors

Radiation Work Permits

2000-0001 General Work

2000-0007 General Tours

2000-0011 Routine Work

2000-0021 Security Functions

2000-0031 Operations Department General and Routine Work

1999-1000 Cask Fill pit-Clean Up