

July 7, 2000

Mr. John K. Wood
Vice President - Nuclear
FirstEnergy Nuclear Operating Company
P. O. Box 97, A200
Perry, OH 44081

SUBJECT: PERRY - NRC INSPECTION REPORT 50-440/2000006(DRS)

Dear Mr. Wood:

On June 15, 2000, the NRC completed a routine inspection at your Perry Nuclear Power Plant. The results were discussed on June 15, 2000, with Mr. Kanda and 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 safety 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.

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).

J. Wood

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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. 50-440
License No. NPF-58

Enclosure: Inspection Report 50-440/2000006(DRS)

cc w/encl: B. Saunders, President - FENOC
G. Dunn, Manager, Regulatory Affairs
R. Schrauder, Director, Nuclear
Engineering Department
W. Kanda, General Manager
Nuclear Power Plant Department
N. Bonner, Director, Nuclear
Maintenance Department
H. Bergendahl, Director
Nuclear Services Department
State Liaison Officer, State of Ohio
R. Owen, Ohio Department of Health
C. Glazer, State of Ohio Public
Utilities Commission

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-440
License No: NPF-58

Report No: 50-440/2000006(DRS)

Licensee: FirstEnergy Nuclear Operating Company

Facility: Perry Nuclear Power Plant

Location: P. O. Box 97, A200
Perry, OH 44081

Dates: June 12–15, 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

- 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

Perry Nuclear Power Plant, Unit 1
NRC Inspection Report 50-440/2000006(DRS)

The report covers a one-week period of announced inspection by a regional senior radiation specialist. This inspection focused on occupational radiation safety including the access control program, the as-low-as-is-reasonably-achievable (ALARA) planning and controls program, and radiological work planning in conjunction with the fuel rod replacement outage. In addition, radiological monitoring instrumentation, the declared pregnant worker program, and verification of the performance indicator data collecting and reporting process were reviewed.

The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process in Inspection Manual Chapter 0609.

RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

- No findings were identified during this inspection.

Report Details

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Control

.1 Plant Walkdowns and Radiological Boundary Verifications

a. Inspection Scope

The inspector performed walk downs of the radiologically restricted area (RRA) to verify the adequacy of radiological boundaries and postings. Specifically, the inspector performed confirmatory radiation measurements in the Containment and Auxiliary Buildings to verify that radiologically significant work areas (high radiation areas (HRAs), and radiation areas) were properly posted and controlled in accordance with 10 CFR Part 20 and the licensee's procedures.

b. Findings

No findings were identified during this inspection.

.2 Reviews of Radiation Work Permits

a. Inspection Scope

The inspector reviewed selected radiation work permits (RWPs) for the fuel rod replacement outage and electronic dosimeter (ED) alarm set points for both dose rate and accumulated dose for access to high radiation areas. The inspector verified that adequate work controls were in place to maintain worker exposures as-low-as-is-reasonably-achievable (ALARA). Specifically, the inspector reviewed the controls contained in the following RWPs:

- 000110 Plant Tours & Visitor Entries in RRA;
- 005004 Forced Outage Refueling Floor Activities; and
- 005001 Drywell Forced Outage.

b. Findings

No findings were identified during this inspection.

.3 Reviews of Radiologically Significant Work

a. Inspection Scope

The inspector observed work activities in the RRA that were performed in radiation areas or high radiation areas (< 1 rem per hour). This included verifying the adequacy of radiological controls (e.g., RWPs and ALARA reviews), surveys, and radiation

protection technician (RPT) performance and pre-job briefings for the following work activities:

- Drywell Closeout Tour;
- Refuel Floor Decontamination.

b. Findings

No findings were identified during this inspection.

2OS2 As-Low-As-Is-Reasonably-Achievable (ALARA) Planning and Controls

.1 Radiation Dose Controls and Trending

a. Inspection Scope

The inspector reviewed radiological dose control for the fuel rod replacement outage including the licensee's outage dose estimate (31.8 rem) and accumulated dose (24.4 rem). The outage accumulated dose was evaluated using RWP records (dosimetry data) to determine if the dose planning was an accurate estimate of the actual dose accumulated. Actual job exposures were compared with the dose estimates to determine if any jobs had exceeded the initial estimates by more than 50 percent and had exceeded 5 person-rem.

b. Findings

No findings were identified during this inspection.

.2 Declared Pregnant Workers

a. Inspection Scope

The inspector reviewed the controls implemented by the licensee for three individuals who voluntarily declared their pregnancies since January 1998. Specifically, the inspector reviewed the licensee's adherence to the requirements contained in 10 CFR 20.1208 and reviewed the licensee's estimation of the dose to the individuals' embryo/fetus. The following documents were reviewed:

- HPI-B0003; Processing of Personnel Dosimetry, Revision 8, December 3, 1998;
- PAP-0114; Radiation Protection Program, Revision 3, December 3, 1998; and
- Dose records for declared pregnant workers.

b. Findings

No findings were identified during this inspection.

2OS3 Radiation Monitoring Instrumentation

.1 Radiation Protection Survey Instrument Use

a. Inspection Scope

The inspector verified the calibration and source checks of the whole body counter, whole body frisking monitors and small article monitors. The following procedures governing calibration and operation of radiation monitors were reviewed:

- HPI-B0015: Operation of the ABACOS 2000 Whole Body Counting System, Revision 0, September 21, 1999;
- HPI-J0054: Calibration of the ABACOS 2000 Whole Body Counting System, Revision 0, September 21, 1999;
- HPI-J0049: Calibration of the Gamma 60 Portal Monitor, Revision 0, October 4, 1995;
- HPI-J25: Calibration of the Gamma 10 Portal Monitor, Revision 2, January 24, 1991;
- HPI-J36: Calibration of the Eberline PCM-1B, Revision 3, January 24, 1991; and
- HPI-J0047: Calibration of the NE SAM-9 Small Article Monitor, Revision 1, December 20, 1996.

b. Findings

No findings were identified during this inspection.

4. **OTHER ACTIVITIES (OA)**

4OA5 Performance Indicator Data Collecting and Reporting Process Review (TI 2515/144)

a. Inspection Scope

The inspector evaluated the licensee's performance indicator (PI) data collection and reporting process to determine whether the licensee was appropriately implementing the NRC/Industry guidance, as documented in Nuclear Energy Institute (NEI) 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guide." The process, which had not been formally documented by procedure, was evaluated by conducting interviews with licensee staff members responsible for data acquisition, verification and reporting.

b. Findings

No findings were identified during this inspection.

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspector presented the inspection results to Mr. Kanda and other members of licensee management at the conclusion of the inspection on June 15, 2000. The licensee acknowledged the information and findings presented. No proprietary information was identified by the licensee.

PARTIAL LIST OF PERSONS CONTACTED

H. Bergendahl, Director, Perry Nuclear Services Department
T. Henderson, Regulatory Affairs
W. Kanda, Plant Manager
S. Lee, Radiation Protection Supervisor
B. Luthanen, Regulatory Assurance
J. Lynch, Radiation Protection Specialist
C. Nash, Chemistry Specialist
J. Sears, Radiation Protection Manager
J. Sipp, Radwaste Environmental and Chemistry Section Manager
E. Thomas, Radiation Protection Supervisor
J. Toward, Auditor

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF BASELINE INSPECTION PROCEDURES PERFORMED

The following inspectable-area procedures were used to perform inspections during the report period. Documented findings are contained in the body of the report.

<u>Inspection Procedure</u>		<u>Report Section</u>
<u>Number</u>	<u>Title</u>	
71121-01	Access Control to Radiologically Significant Areas	2OS1
71121-02	ALARA Planning and Controls	2OS2
71121-03	Radiation Monitoring Instrumentation	2OS3
2515/144	Performance Indicator Data Collecting and Reporting Process Review	4OA5

LIST OF ACRONYMS USED
Radiation Protection and Chemistry

ALARA	As-Low-As-Is-Reasonably-Achievable
CFR	Code of Federal Regulations
CR	Condition Report
ED	Electronic Dosimeter
HRA	High Radiation Area
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OA	Other Activities
PI	Performance Indicator
RRA	Radiologically Restricted Area
RP	Radiation Protection
RPM	Radiation Protection Manager
RPT	Radiation Protection Technician
RWP	Radiation Work Permit
TI	Temporary Instruction

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 NRC inspectors 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.

Procedures

HPI-B0015: Operation of the ABACOS 2000 Whole Body Counting System, Revision 0, September 21, 1999
HPI-J0054: Calibration of the ABACOS 2000 Whole Body Counting System, Revision 0, September 21, 1999
HPI-J0049: Calibration of the Gamma 60 Portal Monitor, Revision 0, October 4, 1995
HPI-J25: Calibration of the Gamma 10 Portal Monitor, Revision 2, January 24, 1991
HPI-J36: Calibration of the Eberline PCM-1B, Revision 3, January 24, 1991
HPI-J0047: Calibration of the NE SAM-9 Small Article Monitor, Revision 1, December 20, 1996
HPI-B0003: Processing of Personnel Dosimetry, Revision 8, December 3, 1998
PAP-0114: Radiation Protection Program, Revision 3, December 3, 1998
PAP-0123: Control of Locked High Radiation Areas, December 29, 1999

Radiation Work Permits

000100	Plant Inspections & Work in Rad Areas
000110	Plant Tours & Visitor Entries in RRA
000200	Plant Inspections, Maintenance & Plant Support
000300	Plant Inspections, Maintenance & Plant Support
000400	Plant Inspections, Maintenance & Plant Support
001002	1G33-C0001A/B Pump Repetitive Maintenance
001003	G60/G61 Sump Work
001007	Coating Project
001026	"F" Systems Preparations
005000	Initial Dry-Well Entries
005001	Dry-Well Forced Outage
005002	BOP/Containment Forced Outage
005003	BOP/Containment L2-LHRA Forced Outage
005004	Forced Outage Refuel Floor Activities
005005	IPTS (VHRA) Activities

Assessments and Audits

Surveillance No. 00-018, Radiation Worker Practice, May 18, 2000
Locked High Radiation Area Control Self-Assessment, March 6, 2000

Miscellaneous

Passive Monitoring at Perry Nuclear Power Plant, March 31, 2000
Dose Records for Declared Pregnant Workers

Condition Reports

00-1585, 99-2957, 00-0052, 99-1157, 99-0657

