

October 23, 2000

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

SUBJECT: PERRY NUCLEAR POWER PLANT - NRC INSPECTION
REPORT 50-440/00-11(DRP)

Dear Mr. Wood:

On September 30, 2000, the NRC completed an inspection at your Perry Nuclear Power Plant, Unit 1 reactor facility. The enclosed report presents the results of that inspection which were discussed on September 26, 2000, with you and other members of your staff.

The inspection was an examination of activities conducted under your license as they relate to 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 selected examination of procedures and representative records, observations of activities, and interviews with personnel.

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).*

Sincerely,

/RA/

Thomas J. Kozak, Chief
Reactor Projects Branch 4

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

Enclosure: Inspection Report 50-440/00-11(DRP)

J. Wood

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cc w/encl: B. Saunders, President - FENOC
N. Bonner, Director, Nuclear
Maintenance Department
G. Dunn, Manager, Regulatory Affairs
K. Ostrowski, Director, Nuclear
Services Department
T. Rausch, Director, Nuclear
Engineering Department
R. Schrauder, General Manager,
Nuclear Power Plant Department
A. Schriber, Chairman, Ohio Public
Utilities Commission
Ohio State Liaison Officer
R. Owen, Ohio Department of Health

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J. Wood

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-440/00-11

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Perry Nuclear Power Plant, Unit 1

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

Dates: August 8 - September 30, 2000

Inspectors: R. Vogt-Lowell, Acting Senior Resident Inspector (SRI)
M. Farber, Reactor Engineer
R. Langstaff, Reactor Engineer
S. Campbell, SRI Fermi
P. Loughheed, Reactor Engineer

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 | 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. 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 05000440-00-11; on 08/08-09/30/2000; FirstEnergy Nuclear Operating Company; Perry Nuclear Power Plant, Unit 1; resident inspector report.

The inspection was conducted by resident inspectors and region-based inspectors. No findings were identified.

Report Details

Summary of Plant Status: The plant began this inspection period with Unit 1 at 98.5 percent power. Maximum Unit 1 power continues to be administratively limited by the licensee to 98.5 percent as a result of power uprate testing conducted in June 2000. On September 10, power was temporarily reduced to approximately 70 percent in support of a rod sequence exchange activity. Power was returned to 98.5 percent later that day and has been maintained at approximately 98.5 percent for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

Reactor (R)

1R04 Equipment Alignment

a. Inspection Scope (71111.04)

The inspectors performed walkdowns of the Low Pressure Core Spray (LPCS) system to verify equipment alignment and identify any discrepancies that could impact the function of the system and therefore potentially increase overall risk to the plant. The inspectors ensured that the configuration of the system was in accordance with applicable operating procedures and checklists and appropriate for the existing conditions.

b. Findings

There were no findings identified.

1R05 Fire Protection

a. Inspection Scope (71111.05)

The inspectors walked down selected risk significant areas looking for any fire protection issues related to: the control of transient combustibles, ignition sources, fire detection equipment manual suppression capabilities, passive suppression capabilities, automatic suppression capabilities, and barriers to fire propagation. The areas walked down were containment building (including refuel floor), fuel handling building, emergency diesel generator rooms, emergency core cooling pump rooms and control complex chillers.

b. Findings

There were no findings identified.

1R11 Licensed Operator Requalification

a. Inspection Scope (71111.11)

On August 29, 2000, the inspectors observed the requalification simulator examination of an operating crew. During the simulator scenario, the licensee evaluators noted that the crew failed to initiate standby liquid control (SLC) prior to reaching 110 degrees Fahrenheit (°F) in the Suppression Pool as required by Plant Emergency Instructions for an ATWS condition. Since initiating SLC was considered a “critical step” in this scenario, the licensee evaluators correctly concluded that the crew had failed the scenario and in accordance with site procedures, would require remediation training before they resumed licensed duties. The proposed remediation plan was reviewed by the inspectors and found to be appropriate to the circumstances. The inspectors verified that the crew satisfactorily completed a simulator reexamination given in accordance with Procedure TMP-2002, “Licensed Operator Requalification Program,” prior to their resumption of licensed duties. The licensee generated Condition Report (CR) 00-2765 to document and investigate this and other failures that had occurred during requalification Cycle 9.

b. Findings

There were no findings identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope (71111.12)

The inspectors verified the licensee’s implementation of the maintenance rule for structures, systems, or components (SSCs) with performance problems. This evaluation included the following aspects:

- If the SSC was scoped in accordance with 10 CFR 50.65;
- Whether the performance problem constituted a maintenance rule functional failure;
- Safety significance classification;
- The proper 10 CFR 50.65 a(1) or a(2) classification for the SSC; and
- The appropriateness of the performance criteria for SSCs classified as a(2) or the appropriateness of goals and corrective actions for SSCs classified as a(1).

The inspectors reviewed the licensee’s implementation of the maintenance rule requirements for performance problems documented in the following CRs:

- CR 00-0946, Division 3 125VDC Normal Battery Charger Voltage Drop
- CR 00-1107, Valve P47F0045B failed PMT during WO00-3720
- CR 00-1549, ½ Main Steam Isolation, RWCU Isolation
- CR 00-2450, Containment Atmosphere Monitoring chart of Drywell Pressure B Recorder not advancing

b. Findings

There were no findings identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

.1 Reactor Core Isolation Cooling (RCIC) Outage

a. Inspection Scope (71111.13)

The inspectors reviewed the licensee's Probabilistic Safety Assessment for the week of August 13 through August 19, 2000. This included a review of the impact to plant risk associated with a planned Reactor Core Isolation Cooling (RCIC) system maintenance outage.

b. Findings

There were no findings identified.

1R15 Operability Evaluations

a. Inspection Scope (71111.15)

The inspectors reviewed a sample of operability evaluations for risk significant SSCs to determine that operability was justified and that no unrecognized increase in risk had occurred. The following operability evaluations were reviewed:

- 00-1639, Revision 0, Diesel driven fire pump has a missing bolt around the turbochargers
- 00-2313, Revision 1, Postulated service water pipe crack in the control complex may result in flooding on the 568 foot elevation of the auxiliary building that exceeds previously evaluated levels
- 00-2458, Revision 0, Three of four capscrews on a RCIC lube oil piping flange have less than full thread engagement

b. Findings

There were no findings identified.

IR19 Post Maintenance Testing

a. Inspection Scope (71111.19)

The inspectors reviewed three post-maintenance testing activities to ensure that the testing adequately verified system operability and functional capability. The inspectors observed all or part of post-maintenance testing associated with the following Work Orders (WO):

- WO 00-7478, Containment Vessel Chilled Water System Chiller "B" (0P50B0001B)

- WO 00-7773, Combustible Gas Purging Unit "B" (Compressor) (1M51C0001B)
- WO 00-7495, AEGTS Train A Flow and Filter Operability Test (SVI M15-T1240A)

b. Findings

There were no findings identified.

1R22 Surveillance Testing

a. Inspection Scope (71111.22)

The inspectors reviewed the below listed surveillance test procedures to verify that requirements were met and were consistent with applicable section of Technical Specifications and Updated Safety Analysis Report.

- SVI-B21T0135B, "ECCS/RCIC RPV Water Level Low, Level 1 And 2 Channel B Functional for 1B21-N691B" (WO 99-9892)
- SVI-E31T0086A, "NUMAC LDM Calibration for 1E31-N700A" (WO 99-9276)
- SVI-D17T8044, "ESW Loop B Radiation Monitor 1D17-K605 Channel Calibration" (WO 99-6716)

b. Findings

There were no findings identified.

1R23 Temporary Plant Modifications

a. Inspection Scope (71111.23)

The inspectors reviewed Temporary Modification Tag Order 1-00-002, "Remove Limit Switch Activation Linkage from Reactor Feed Pump Turbine A," which removed an interlock between the feedwater stop and control valves and disabled a turbine trip reset pushbutton. The inspectors reviewed the temporary modification and 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 modification did not affect system operability/availability. The inspectors also verified that the temporary modification was consistent with plant documentation and procedures.

b. Findings

There were no findings identified.

Emergency Preparedness (EP)

1EP6 Drill Evaluation

a. Inspection Scope (71114.06)

On August 29, 2000, inspectors observed a licensee evaluated simulator scenario, being conducted as part of the licensed operator requalification program, which required an emergency classification by the operating crew's shift supervisor. The inspectors determined that the correct classification and notifications were made within the required times.

b. Findings

There were no findings identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope (71151)

The inspectors reviewed licensee documents and held interviews with licensee personnel to review the data collected and reported for the "High Pressure Injection System (HPCS) - Safety System Unavailability" performance indicator. To determine the validity of the HPCS performance indicator, the inspectors also reviewed control room logs and condition reports for the first and second quarter of 2000, as well as Nuclear Energy Institute (NEI) document NEI-99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0.

b. Findings

There were no findings identified.

4OA3 Event Follow-up

a. Inspection Scope (71153)

The inspectors reviewed the licensee's August 16, 2000, report pursuant to 10 CFR 50.72 and subsequent retraction of an automatic start of the Annulus Exhaust Gas Treatment System (AEGTS). The inspectors verified that the retraction was in accordance with NUREG-1022, Revision 1, Section 3.3.2, "Actuation of an Engineered Safety Feature or the RPS."

b. Findings

There were no findings identified.

4OA5 Other

(Closed) URI 50-440/1996014-02: Potential Misclassification of Risk Significant Functions. Revision 2 of Engineering Calculation 6.16, Determination of Level 1 PSA Safety Significant SSCs for the PNPP Maintenance Rule included common cause cutsets, which had been excluded in Revision 1. As a result of this calculation, Expert Panel High Safety Significance Determination of SSCs and Functions for the PNPP Maintenance Rule Program, Revision 3, added a number of new functions and components to the list of High Safety Significance SSCs. There were no upgrades of components or functions previously classified as Low Safety Significance. This item is closed.

(Closed) IFI 50-440/1999005-01: Revisions to Controls on the Implementation of Managed Restoration. The licensee issued comprehensive controls on the use of "managed restoration," in PAP-1125, Maintenance Rule Reference Guide. These controls included specific identification of which systems were eligible for use of "managed restoration," specific staff responsibilities, specification of restoration activities, and explicit guidance on designation of the "dedicated" individual. This item is closed.

(Closed) IFI 50-440/1999005-02: Review of the Acceptability of the Practice of Managed Restoration as a Policy Matter. The inspectors' review did not identify any functions that exceeded performance criteria as a result of using "managed restoration." Unavailability in the NRC system of performance indicators used in the reactor oversight program is recorded using the NUMARC 93-01 definition which does not include "managed restoration." The licensee complies with this position. This item is closed.

(Closed) IFI 50-440/1999005-03: Review of Results of Licensee Evaluation of the Most Recent Control Complex Chiller (P47) Failure. The minutes of Expert Panel Meeting No. 150, dated May 19, 1999, show that as a result of the control complex chiller failure in question, the system was classified as (a)(1) with the need to establish goals, monitoring, and corrective actions. After surveying other owners of these chillers, the licensee elected to do a design change to remove the over temperature sensor. This was completed and appears to have been effective. The system has since been transferred back to (a)(2) status. This item is closed.

4OA6 Management Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. J. Wood, Vice President - Nuclear and other members of licensee management on September 26, 2000, during the final week of the inspection period. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

KEY POINTS OF CONTACT

Licensee

J. Wood, Vice President-Nuclear
B. Boles, Operations Manager
N. Bonner, Director, Nuclear Maintenance Department
S. Davis, Superintendent, Plant Operations
G. Dunn, Manager, Regulatory Affairs
D. Gudger, Supervisor, Compliance
H. Hegrat, Manager, Quality Assurance
T. Lentz, Manager, Design Engineering
B. Luthanen, Compliance Engineer
K. Ostrowski, Director, Nuclear Services Department
D. Philipps, Manager, Plant Engineering
T. Rausch, Director, Nuclear Engineering Department
R. Schrauder, General Manager, Nuclear Power Plant Department

NRC

R. Vogt-Lowell, Acting Senior Resident Inspector (SRI)
M. Farber, Reactor Engineer
R. Langstaff, Reactor Engineer
S. Campbell, SRI Fermi
P. Lougheed, Reactor Engineer

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-440/1996014-02	URI	Potential Misclassification of Risk significant Functions
50-440/1999005-01	IFI	Revisions to Controls on the Implementation of "Managed Restoration"
50-440/1999005-02	IFI	Review of the Acceptability of the Practice of "Managed Restoration" as a Policy Matter
50-440/1999005-03	IFI	Review of Results of Licensee Evaluation of the Most Recent Control Complex Chiller (P47) Failure

Discussed

None

LIST OF ACRONYMS AND INITIALS USED

ADAMS	Agency-Wide Documents Access and Management System
AEGTS	Annulus Exhaust Gas Treatment System
CFR	Code of Federal Regulations
CR	Condition Report
CRD	Control Rod Drive
DG	Diesel Generators
DRP	Division of Reactor Projects
EA	Enforcement Action
ESW	Emergency Service Water
FENOC	FirstEnergy Nuclear Operating Company
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning
I&C	Instrumentation and Controls
IFI	Inspection Followup Item
INPO	Institute of Nuclear Power Operations
IP	Inspection Procedure
IR	Inspection Report
LCO	Limiting Condition for Operation
LER	Licensee Event Report
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
OEO	Operations Evolution Order
PACP	Plant Access Control Point
PAP	Plant Administrative Procedure
PARS	Publicly Available Records
PIF	Potential Issue Form
PSA	Probabilistic Safety Assessment
RCIC	Reactor Core Isolation Cooling
RG	Regulatory Guide
RHR	Residual Heat Removal
RRCS	Redundant Reactivity Control System
SE	Safety Evaluation
SO-ATC	Supervising Operator at the Controls
SOI	System Operating Instruction
SR	Surveillance Requirements
SVI	Surveillance Instruction
TCP	Transient Combustible Permit
TS	Technical Specification
URI	Unresolved Item
US	Unit Supervisor
USAR	Updated Safety Analysis Report
VIO	Violation
WO	Work Order