December 1, 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 50-440/00-12(DRP)

Dear Mr. Wood:

On November 15, 2000, the NRC completed an inspection at the Perry Nuclear Power Plant. The enclosed report presents the results of that inspection which were discussed on November 15, 2000 with you and 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.

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,

/RA/

Thomas J. Kozak, Chief
Reactor Projects Branch 4

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

Enclosure: Inspection Report 50-440/00-12(DRP)

See Attached Distribution

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-440
License No:	NPF-58
Report No:	50-440/00-12
Licensee:	FirstEnergy Nuclear Operating Company (FENOC)
Facility:	Perry Nuclear Power Plant, Unit 1
Location:	P.O. Box 97 A200 Perry, OH 44081
Dates:	October 1 - November 15, 2000
Inspectors:	C. Lipa, Senior Resident Inspector R. Vogt-Lowell, Resident Inspector D. Schrum, 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
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

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 05000440-00-12; on 10/01-11/15/2000; FirstEnergy Nuclear Operating Company; Perry Nuclear Power Plant; resident inspector report.

The inspection was conducted by resident inspectors and a regional inspector. No findings of significance were identified.

Report Details

Summary of Plant Status: The plant began this inspection period with Unit 1 administratively limited to 98.5% power. Following a downpower on October 7-9, reactor power was administratively limited to 95.2% when moisture separator reheaters remained out of service until October 15 when power was restored to 98.5%. There were several short downpowers to about 75% reactor power during the inspection period for control rod sequence exchanges and repair of a moisture separator reheater drain line.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

Reactor (R)

1R01 Adverse Weather Protection

a. Inspection Scope (71111.01)

The inspectors initiated a review of the licensee's cold weather readiness via an examination of the following documents:

IOI-15	"Seasonal Variations"
PTI-GEN-0026	"Preparations for Winter Operations"
PTI-GEN-0027	"Cold Weather Support System Startup"
ONI R36-2	"Extreme Cold Weather"
ONI P40	"Frazil Ice"
SOI R36	"Heat Tracing and Freeze Protection System"
ICI-C-R36-1	"Heat Tracing and Freeze Protection Panels"

Inspection requirements under this module are expected to be completed during the next inspection report period.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope (71111.04)

The inspectors reviewed equipment alignment on the systems listed below while the redundant train was inoperable for maintenance or while the system was relied upon by the plant's on-line risk assessment to minimize plant risk while other equipment was out of service. The inspectors performed walkdowns of the systems 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.

- On November 6, during planned maintenance on the "B" train of the emergency service water system, the inspectors verified proper alignment of emergency service water system train "A."

- On November 9, during maintenance on the Division 2 emergency diesel generator (EDG) and other Division 2 equipment, the inspectors verified proper alignment of the high pressure core spray system.

b. Findings

No findings of significance were 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. Eleven areas were walked down, including all 3 Divisional EDG rooms, all 3 Divisional switchgear rooms, the remote shutdown panel area, and Division 1 and 2 battery rooms and battery charger rooms. The inspectors also reviewed Condition Reports 00-3074 and 00-3421 that were written to document degraded floor dams in the EDG rooms.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope (71111.11)

On October 11, 2000, the inspectors observed a routine licensed operator evaluated scenario as part of the requalification training week. The inspectors verified that licensed operator failures identified during the scenario were discussed during the critique and were followed up for remediation. The licensee initiated Condition Report 00-3343 to document the failures.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope (71111.12)

The inspectors reviewed the implementation of the maintenance rule program for equipment problems documented in the condition reports listed below. The inspectors verified that the licensee correctly classified the equipment issues (as a functional failure, maintenance preventable functional failure, condition monitoring failure, etc.). In addition, the inspectors reviewed the associated performance criteria for each failure.

- 00-2472, "The Diesel and Electric Fire Water Pumps Flow Data and Control Panel Functional Test (PTI-P54-P0036) was not designated as an Inoperable or Out-of-Service System, Train or Component Managed for Availability with Timeliness Criteria when the test was performed."

- 00-1971& 1936, "Relays 1E12AK111A and 1E12A-K111B have exceeded their established replacement frequency."

- 00-1473, "High flow condition identified during Surveillance Testing of the Annulus Exhaust Gas Treatment System (AEGTS) 1M15D001A Plenum Heater via SV1-M15-T1239 on May 15, 2000, resulting in TS inoperability."

- 00-0711, "The B Control Complex Chiller was not maintaining chill water temperature when the outlet temperature was found high out of specification, reading 53 degrees Fahrenheit. Also, the investigation discovered the chiller guide vane actuator arm linkage had sheared."

- 00-0859, "Functionality of Plant Radiation Monitor (D17) Power Supply Drawer in question due to a disconnect between the Preventive Maintenance Testing specified in Work Order 99-14200 and Work Order 00-1193."

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope (71111.13)

- The inspectors reviewed risk assessments associated with the failure of the Unit 2 startup transformer on October 2, 2000. The licensee had administrative controls in place following the failure of the transformer until a risk assessment could be performed. Switch yard breaker work was temporarily suspended and other scheduled activities were reviewed. Later in the day, the risk assessment was finalized, and there was determined that there was no increase in plant risk associated with the unit 2 startup transformer being out of service. The inspectors conferred with an NRC Region III Senior Risk Analyst in evaluating the licensee's risk assessment during the period of time that the startup transformer was out of service.

- The inspectors reviewed the licensee's risk assessment for planned work on the emergency service water screen wash system (0P49D001A) on October 12, 2000.

- The inspectors reviewed the licensee's Probabilistic Safety Assessment (PSA) associated with the Division 2 EDG extended outage as allowed by Technical Specification (TS) Amendment 99. The outage was scheduled for November 6-12, 2000. The inspectors reviewed the assumptions in the PSA for the outage, which included other planned work on the Division 2 emergency service water, residual heat removal, and emergency closed cooling systems. The inspectors also reviewed the planned schedule of activities as compared to the PSA document and the TS amendment commitments. The inspectors also reviewed Operations Department Memorandum, POS-2000-0066, which contained a summary of the licensee's review of other factors that could affect the risk associated with performing the extended outage on the Division 2 EDG, such as weather conditions and grid stability. The inspectors reviewed the PSA documents, including the lists of equipment that would be protected during the outage.

- On November 12, 2000, during post-maintenance testing of the Division 2 EDG, the test was terminated when crankcase pressure increased and auxiliary operators reported water leaking out of the crank case blower vents. The licensee identified that jacket water had leaked into the lubricating oil for the engine. As a result, the duration of the EDG outage was extended beyond that originally scheduled. The inspectors reviewed the changes made to scheduled work and reviewed activities worked to ensure that no risk-significant work was begun with the continuation of the EDG outage. The inspectors also reviewed plant operator log entries to ensure no risk-significant equipment was removed from service that was not planned.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions

a. Inspection Scope (71111.14)

The inspectors selected the two planned nonroutine plant evolutions listed below for review. The review evaluated the licensee's preparation for and implementation of the evolutions, focusing particular attention on human performance during the restoration activities. The inspectors observed control room operator performance during the nonroutine plant evolutions, and confirmed that their responses were in accordance with the responses required by procedures and training.

- On November 5 and 6, 2000, the inspectors reviewed the preparation, implementation, and restoration activities associated with the performance of IPTE 00-009, "Performance of TXI-0324, 'Power Changes for OPRM Testing'." This nonroutine plant evolution required entry into the increased awareness region of the power to flow map for OPRM data collection. The inspectors observed that the testing was completed satisfactorily and that the plant was properly restored to the pre-test configuration.

- On October 30, 2000, the inspectors reviewed the troubleshooting plan for determining the cause of reactor level variations referenced in Condition Report 00-3342. Installation of a data acquisition system to monitor various parameters associated with the Feedwater Control System necessitated placement of the feedwater control system in manual control. The inspectors observed this nonroutine evolution whereby the feedwater control system was aligned with both Reactor Feed Pump Turbines in manual control on the speed potentiometers in accordance with applicable sections of the system operating instructions. During this time, the operators successfully manually controlled reactor water level. Subsequent to the installation of the data acquisition system, the inspectors observed control room operators successfully restore reactor level control to automatic in accordance with applicable sections of the system operating instructions. The inspectors observed that the activities were completed satisfactorily.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope (71111.15)

The inspectors reviewed the licensee's assessment that TS 3.8.1 was met with the Unit 2 startup transformer out of service following its failure on October 2. This included a review of the USAR, TS bases, and Safety Evaluation #96-0046 and discussion with personnel from the NRC Office of Nuclear Reactor Regulation. The inspectors verified that the TS 3.8.1 requirement of having two offsite qualified circuits was met.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope (71111.16)

The inspectors reviewed the licensee's operator workaround list and selected one item, increased testing of the standby liquid control system pumps, for review. Engineering department personnel determined the testing to be necessary based on increased vibrations. Operations Management added this to their list of workarounds based on increased operations department resources necessary to complete the more frequent surveillances. The inspectors verified that the item was entered in the corrective action program as Repair Tag #73378 and Condition Report 00-2572.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope (71111.19)

The inspectors selected the four activities listed below for review. The work package was reviewed to identify test requirements and the test was observed to verify that test requirements were met. The inspectors also reviewed other documents such as the USAR, Technical Specifications, and maintenance procedures to determine whether or not the testing was sufficient to demonstrate that the systems and components were capable of performing their intended safety functions.

- On October 23, 2000, the inspectors selected for review Work Order 00-2760 used to replace capacitors in master trip unit for condenser vacuum - low trip. The post maintenance testing consisted of a resistance check after the new capacitor was soldered to the circuit board and then completion of SVI-B21-T0076C, "Main Steam Line Low Condenser Vacuum Channel C Functional," after the trip unit was reinstalled in the control room panel.

- On November 7, the inspectors selected for review Work Orders 00-6498 and 99-12525 which were used to conduct maintenance on the emergency core cooling system pump room coolers and the motor control centers. The post-maintenance test consisted of starting the room cooler from the control panel and verifying that the room cooler operated normally, without any belt squealing or abnormal vibration. The inspectors accompanied the operators in the plant and observed that the testing was completed satisfactorily.

- On November 7, the inspectors selected for review Work Order 00-6486 which was used to conduct maintenance on residual heat removal system valve E12 F064B. Following work according to PMI 30, "Maintenance of Limitorque Valve Operators," and GEI 006, "General Maintenance of Motor Control Centers," the testing was performed per PAP-205, "Post-Maintenance Requirements," and SVI-E12-T2002, "RHR A Pump and Valve Operability Test." The testing included a partial surveillance test for valve stroking and timing. The inspectors observed that the testing was properly completed.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope (71111.22)

The inspectors witnessed the below listed surveillance tests and verified that requirements were met and were consistent with applicable sections of Technical Specifications, USAR and Plant Procedures. The inspectors verified that test control was properly coordinated with the control room and that the testing was properly performed in the sequence specified in the surveillance instruction. Also, the inspectors verified that test equipment was properly calibrated and installed to support the surveillance tests.

- SVI-D17T2001, “Plant Radiation Monitoring Isolation Valves Operability Test”
- SVI-B21T0033A, “RPV Steam Dome & RHR Cut-in Permissive High Pressure Channel A Calibration for 1B21-N678A”
- SVI-E12T1182A, “RHR A LPCI Valve Lineup Verification and System Venting”
- SVI-R1O-T5227, “Off Site Power Availability Verification”
- ISI-E22-TI300, “High Pressure Core Spray System Leakage Pressure Test Class 1".

b. Findings

No findings of significance were identified.

Emergency Preparedness (EP)

1EP6 Drill Evaluation

a. Inspection Scope (71114.06)

On October 11, 2000, the inspectors observed a simulator-based training evolution, which the licensee had declared as contributing to the performance indicator for drill performance. The inspectors verified that the correct classification and notifications were made within the required times during the drill.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Data Collecting and Reporting Process Review, TI 2515/144

a. Inspection Scope

The inspectors reviewed licensee documents and conducted interviews with licensee personnel regarding the performance indicator data collecting and reporting methods at the Perry site for the “Initiating Events - Unplanned Power Changes per 7000 Critical Hours,” and for the “Physical Protection - Protected Area Security Equipment Performance Index,” performance indicators.

Included was a review of: data collection and reporting process, indicator definitions, data reporting elements, calculational methods, and definition of terms for consistency with industry guidance document NEI [Nuclear Energy Institute] 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 0. The licensee documents reviewed were:

- "Desktop Guideline, NRC Performance Indicators," Revision O, dated March 10, 2000;

- Completed investigation of Condition Report 00-2392 concerning the rigor of plant specific guidance for collecting and reporting performance indicator data.

- Completed "Appendix A: Data Provider Desktop" for "Initiating Events - Unplanned Power Changes per 7000 Critical Hours," and for the "Physical Protection - Protected Area Security Equipment Performance Index," performance indicators.

b. Findings

The inspectors noted that individual "Appendix A: Data Provider Desktop" sheets, available for each performance indicator, provide a format for capturing a brief description of the data collection process including the "where, when and how" data is collected. Completed Appendix A sheets were reviewed for the "Initiating Events - Unplanned Power Changes per 7000 Critical Hours," and for the "Physical Protection - Protected Area Security Equipment Performance Index," performance indicators. Table 1 of the "Desktop Guideline, NRC Performance Indicators" identifies, by indicator, the performance indicator manager, the data provider, and an alternate data provider. The inspectors interviewed the individuals assigned as "data providers" for the two performance indicators referenced above, and ascertained their knowledge of industry guidance and their familiarity with the recording and reporting of their assigned performance indicator. The inspectors noted that although the documented data collection methods for unplanned power changes relied on data logged by the Operations staff, such logging was not procedurally required. Nevertheless, the inspectors confirmed that the data providers were knowledgeable and capable of utilizing other plant data to determine unplanned power changes for determining the "Unplanned Power Changes per 7000 Critical Hours" performance indicator. No findings of significance were identified.

Cornerstones: Mitigating Systems and Barrier Integrity

Performance Indicator Verification

a. Inspection Scope (71151)

The inspectors verified the licensee's data for the performance indicators (PIs) listed below. For the time periods indicated, the inspectors reviewed: (1) Operator Logs and Daily Plant Status Reports for information related to the indicators, and (2) Condition Reports related to system equipment issues (00-2893, 00-1623, 00-1892, 00-1951, 00-1651, 00-2458, and 00-2440). The inspectors also verified that the licensee's data met the guidance in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0.

- Reactor Coolant System Leakage, Q1-Q3 2000

- Reactor Core Isolation Cooling System, Q1-Q2 2000

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

(Closed) Licensee Event Report 50-440/2000-004-00: "TS 3.0.3 Entered due to Inoperability of Both Trains of Annulus Exhaust Gas Treatment System." This issue was discussed in NRC Inspection Report 50-440/2000-003 and dispositioned as a green finding. This LER 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 at the conclusion of the inspection on November 15, 2000. 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
K. Russell, Compliance Engineer
R. Schrauder, General Manager, Nuclear Power Plant Department

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Closed

440/2000-004-00	LER	TS 3.0.3 Entry - Both Trains of AEGTS Inoperable

Discussed

None.

LIST OF ACRONYMS AND INITIALISMS USED

ADAMS	Agencywide Documents Access and Management Sylstem
AEGTS	Annulus Exhaust Gas Treatment System
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
FENOC	FirstEnergy Nuclear Operating Company
IR	Inspection Report
IPTE	Infrequently Performed Test or Evolution
LER	Licensee Event Report
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PAP	Plant Administrative Procedure
PARS	Publicly Available Records
PDR	Public Document Room
PSA	Probablistic Safety Assessment
RHR	Residual Heat Removal
SVI	Surveillance Instruction
TS	Technical Specification
USAR	Updated Safety Analysis Report