

August 28, 2000

Mr. G. Rainey, President  
PECO Energy Co.  
Nuclear Group Headquarters  
Correspondence Control  
P. O. Box 160  
Kennett Square, PA 19348

SUBJECT: LIMERICK GENERATING STATION - NRC'S INSPECTION REPORT  
05000352/2000-006 AND 05000353/2000-006

Dear Mr. Rainey:

On August 12, 2000, the NRC completed an inspection at your Limerick 1 and 2 reactor facilities. The enclosed report presents the results of that inspection. The inspection results were discussed with Mr. J. von Suskil and other members of your staff on August 18, 2000.

This inspection was an examination of 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. 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, there were no findings.

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Sincerely,

**/RA/**

Curtis J. Cowgill, Chief  
Project Branch 4  
Division of Reactor Projects

Docket Nos.: 05000352, 05000353  
License Nos: NPF-39, NPF-85

Enclosure:

Inspection Report 05000352/2000-006, 05000353/2000-006

Mr. G. Rainey

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cc w/encl:

J. J. Hagan, Senior Vice President, Nuclear Operations Station Support

G. Hunger, Chairman, Nuclear Review Board

J. A. Hutton, Director - Licensing, PECO Nuclear

J. D. von Suskil, Vice President - Limerick Generating Station

R.C. Braun, Plant Manager, Limerick Generating Station

K. Gallogly, Manager, Experience Assessment

Secretary, Nuclear Committee of the Board

Commonwealth of Pennsylvania

Mr. G. Rainey

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U.S. NUCLEAR REGULATORY COMMISSION

REGION 1

Docket Nos: 05000352, 05000353  
License Nos: NPF-39, NPF-85

Report No: 05000352/2000-006, 05000353/2000-006

Licensee: PECO Energy Co.  
Nuclear Group Headquarters  
Correspondence Control  
P. O. Box 160  
Kennett Square, PA 19348

Facility: Limerick Generating Station, Units 1 & 2

Location: Evergreen and Sanatoga Roads  
Sanatoga, PA 19464

Dates: July 1, 2000 thru August 12, 2000

Inspectors: A. Burritt, Senior Resident Inspector  
B. Welling, Resident Inspector  
A. Blamey, Resident Inspector, Susquehanna  
D. Cullison, Project Engineer

Approved by: Curtis Cowgill, Chief,  
Projects Branch 4  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000352-00-06, 05000353-00-06, on 7/01-08/12/2000; PECO Energy; Limerick Generating Station; Units 1 and 2. Resident operations report.

This report covered a six-week period of resident inspection conducted per the NRC's Reactor Oversight Process (Attachment 1). The inspections identified no findings. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process.

## Report Details

### Summary of Plant Status:

Unit 1 began this inspection period operating at 100% power. On July 27, 2000, power was reduced to approximately 97%, after a control rod drifted inward. The unit was returned to 100% power on July 28. Unit 1 remained at full power throughout the remainder of the period except for minor load reductions for planned testing and control rod pattern adjustments.

Unit 2 began this inspection period operating at 100% power. On July 8, power was reduced to approximately 20%, following a main turbine control valve closure. Unit loads were returned to 100% on July 9, where it remained throughout the period except for minor load reductions for planned testing and control rod pattern adjustments.

### **1. REACTOR SAFETY**

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R04 Equipment Alignment Walkdowns (71111.04)

##### a. Inspection Scope

The inspectors performed partial system walkdowns of the 2A, 2B, and 2D residual heat removal systems, while the 2C residual heat removal system was out of service. The inspectors also walked down the 1B core spray system while the 1A core spray system was out of service. These inspections verified critical portions of redundant or backup systems/trains while a system was out of service.

##### b. Issues and Findings

There were no findings identified.

#### 1R05 Fire Protection (71111.05)

##### a. Inspection Scope

The inspectors toured high fire risk areas at both Limerick units to assess PECO's control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The fire areas included:

- Control room and peripheral rooms (fire area 24)
- Control room structure fan room (fire area 27)
- 1B residual heat removal compartment (fire area 31)
- Unit 2 safeguards system isolation valve room (fire area 66)

##### b. Issues and Findings

There were no findings identified.

1R11 Licensed Operator Requalification (71111.11)a. Inspection Scope

The inspector observed licensed operator performance and the evaluator's critiques during a simulator evaluation and a simulator training scenario.

b. Issues and Findings

There were no findings identified.

1R12 Maintenance Rule Implementation (71111.12)a. Inspection Scope

The inspectors reviewed licensee follow-up actions with respect to the Maintenance Rule for the following equipment performance problems:

- Unit 1 high pressure coolant injection system demand failure in June 1999
- Unit 2 turbine enclosure cooling water heat exchanger reduced flow/cooling during single heat exchanger operation
- 1D traversing in-core probe ball valve failure to close
- D22 emergency diesel generator auxiliary fuel oil pump failure

b. Issues and Findings

There were no findings identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13)a. Inspection Scope

The inspectors reviewed PECO's risk management for the following emergent and planned maintenance activities:

- 2C residual heat removal system outage work with concurrent emergency service water system work
- D22 emergency diesel generator maintenance overhaul
- Unit 2 turbine enclosure cooling water heat exchanger reduced flow/cooling during single heat exchanger operation.

b. Issues and Findings

There were no findings identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

a. Inspection Scope

The inspectors evaluated control room operator performance following a control rod drifting (inward) due to a failed transponder card.

b. Issues and Findings

There were no findings identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability evaluations associated with the following plant equipment conditions:

- Inability to isolate the emergency service water supply, stop check valve (HV-011-231C), to the D23 emergency diesel generator
- 2C low pressure coolant injection valve leakage
- D22 emergency diesel generator support system pipe coupling configuration deficiencies

b. Issues and Findings

There were no findings identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors observed post-maintenance tests and reviewed test data for the following:

- 1A core spray system
- 2C standby liquid control pump

b. Issues and Findings

There were no findings identified.



1R22 Surveillance Testing (71111.22)a. Inspection Scope

The inspectors observed or reviewed the results of several scheduled equipment surveillance tests, including:

- Unit 1 - ST-2-072-101-1, Division I nuclear steam supply system shutoff logic system functional test
- Unit 1 - ST-6-092-313-1, D13 emergency diesel generator slow start test
- Unit 2 - ST-6-051-231-2, 2A residual heat removal pump valve and flow test

b. Issues and Findings

There were no findings identified.

**4. OTHER ACTIVITIES**4OA1 Performance Indicator Verification (71151)a. Inspection Scope

The inspectors reviewed the accuracy and completeness of the supporting data for the following licensee performance indicators (PI):

- Emergency AC power (July 1997 to June 2000)
- Scrams with loss of normal heat removal (July 1997 to June 2000)

The inspectors reviewed operating logs, surveillance test logs, clearance activities, monthly operating reports, and action requests as applicable.

b. Issues and Findings

There were no findings identified.

4OA6 Meetings, Including Exit.1 Exit Meeting Summary

The inspectors presented the final inspection results to Mr. von Suskil and other members of the licensee management at the conclusion of the inspection on August 18, 2000.

## PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. A. Alderfer	Senior Manager, Plant Engineering
J. M. Armstrong	Director, Site Engineering
R. C. Braun	Plant Manager
F. A. Cook	Senior Manager, Design Engineering
G. H. Gellrich	Director, Maintenance
W. O. Harris	Manager, Radiation Protection
J. T. Klenk	Manager, Operations Training
J. A. Tucker	Senior Manager, Operations
J. A. Wasong	Director, Training
J. D. von Suskil	Vice President, Limerick Generating Station

NRC

A. Blamey	Resident Inspector, Susquehanna
A. Burritt	Senior Resident Inspector
D. Cullison	Project Engineer
B. Welling	Resident Inspector

**ITEMS OPENED, CLOSED, AND DISCUSSED**Opened

None

Opened and Closed During this Inspection

None

Previous Items Closed

None

Previous Items Discussed

None

**LIST OF ACRONYMS USED**

CFR	Code of Federal Regulations
HPCI	high pressure core injection
LER	licensee event report
NRC	Nuclear Regulatory Commission

## ATTACHMENT 1

### 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>.