

January 14, 1999

Mr. G. Rainey, President
PECO Nuclear
Nuclear Group Headquarters
Correspondence Control Desk
P. O. Box 195
Wayne, PA 19087-0195

SUBJECT: NRC INSPECTION REPORT 05000352/1999009, 05000353/1999009

Dear Mr. Rainey:

On December 20, 1999, the NRC completed an inspection of routine activities at your Limerick Generating Station, Units 1 and 2. The enclosed report presents the results of this inspection.

Your staff continued to operate both units safely. Your operators responded well to an automatic recirculation pump run-back at Unit 1 following a trip of the 1C condensate pump.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The NCV involved a primary containment isolation valve that was inoperable on two separate occasions for a period that exceeded the Technical Specification allowed outage time. This violation is being treated as a Non-Cited Violation (NCV) consistent with Section VII.B.1.a of the Enforcement Policy. If you contest the violation or its severity level, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001, with a copies to the Regional Administrator, Region I, and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001, and the NRC resident at the Limerick Generating Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be placed in the NRC Public Document Room (PDR).

No reply to this letter is required, but should you have any questions regarding this please contact me at 610-337-5322.

Sincerely,

***Original Signed by:
Curtis Cowgill***

Curtis J. Cowgill, Chief
Project Branch No. 4
Division of Reactor Projects

Mr. G. R. Rainey

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Docket Nos.: 05000352, 05000353

License Nos: NPF-39, NPF-85

Enclosures:

NRC Inspection Report 05000352/1999009, 05000353/1999009

cc w/encl:

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Mr. G. R. Rainey

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EXECUTIVE SUMMARY
Limerick Generating Station, Units 1 & 2
NRC Inspection Report 05000352/1999009, 05000353/1999009

This inspection included aspects of PECO Energy operations, maintenance, and engineering. The report covers a six-week period of resident inspection.

Operations

- The operations staff responded well to a loss of a condensate pump and associated recirculation pump runback. Plant management was responsive to an NRC inspector concern regarding deficiencies in the procedural guidance for a recirculation pump runback event. (Section O3.1)
- LER 1-99-012 identified that a primary containment isolation valve (PCIV) was made inoperable for a period that exceeded the Technical Specification allowed outage time on two separate occasions. Operators did not adequately review tagging clearances, which inadvertently defeated the automatic isolation capability of the PCIV. This Severity IV violation is being treated as a Non-Cited Violation consistent with Section VII.B.1.a of the enforcement policy. This violation is in the PECO corrective action program as PEP I0010301. (Section O8.1)

Maintenance

- PECO's engineering, maintenance, and operations staffs demonstrated careful planning and execution of work to replace, at power, a failed solenoid valve for a Unit 2 outboard MSIV. (Section M1.3)

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Report Details

Summary of Plant Status

Unit 1 began this inspection period operating at 100%. The unit remained at full power throughout the period with exceptions for testing, rod pattern adjustments, and the following plant event:

- November 23 An automatic recirculation pump run-back reduced reactor power to 60% when the 1C condensate pump breaker tripped due to an electrical fault. Operators further lowered power to 55% to place the third reactor feed pump in standby. Operators returned the unit to 100% on November 27, 1999.

Unit 2 began this inspection period operating at 100%. The unit remained at full power throughout the period with exceptions for testing, rod pattern adjustments, and the following plant event:

- November 23 Operators reduced reactor power to 62% to allow for corrective maintenance on the 2B outboard main steam isolation valve (MSIV). Operators isolated and restored the MSIV to support replacement of a defective DC powered solenoid associated with the valve's opening and closing mechanism. Operators returned the unit to 100% on November 24, 1999.

I. Operations

O1 Conduct of Operations¹

O1.1 General Comments (71707)

PECO Energy (PECO) conducted activities at Limerick Units 1 and 2 safely. Routine operations, surveillance, and other plant-related activities were performed as per station procedures in a deliberate manner with clear communications and effective oversight by shift supervision. Control room logs accurately reflected plant activities and shift turnovers were comprehensive. Operators implemented effective controls for work activities using conservative decision-making.

O2 Operational Status of Facilities and Equipment

O2.1 Facility Tours (71707)

The inspectors routinely conducted independent plant tours and walk-downs of selected portions of safety-related systems during the inspection period. These activities consisted of the verification that system configurations, power supplies, process parameters, support system availability, and current system operational status were consistent with Technical Specification (TS) requirements and Updated Final Safety

¹ Topical headings such as O1, M8, etc., are used in accordance with the NRC standardized reactor inspection report outline. Individual reports are not expected to address all outline topics.

Analysis Report (UFSAR) descriptions. System operability and material conditions were noted to be acceptable in all cases. The inspectors did not identify any substantive concerns or deficiencies as a result of these walk-downs.

O3 Operations Procedures and Documentation

O3.1 Operations Procedure Quality

a. Inspection Scope (71707)

The inspector observed the operations staff's use of operating procedures following a trip of a condensate pump and associated automatic recirculation pump run-back.

b. Observations and Findings

On November 23, 1999, an automatic recirculation pump run-back reduced reactor power to 60% when the 1C condensate pump breaker tripped due to an electrical fault in the 'C' phase current transformer. The unit responded as designed with no other equipment malfunctions.

The inspector noted some deficiencies with the procedural guidance for a recirculation pump runback event. The operators used portions of several procedures to respond to the event. The inspector noted that no operational transient (OT) procedure provided clear and consistent guidance to the operator for a recirculation pump runback. The inspector observed that once the plant had stabilized, the operators were simultaneously executing portions of GP-5 "Power Operations," GP-2 "Normal Plant Startup," and GP-3, "Normal Plant Shutdown". Because these procedures gave conflicting guidance, the control room supervisor had to select the applicable procedural steps to perform. Nevertheless, the inspector determined that the operators responded well to the loss of the condensate pump and associated recirculation pump runback.

In discussion with the inspectors, plant management stated that clear and consistent procedural guidance should be provided to the operators. Plant management indicated that the applicable OT and GP procedures will be reviewed and revised as necessary.

c. Conclusions

The operations staff responded well to a loss of a condensate pump and associated recirculation pump runback. Plant management was responsive to an NRC inspector concern regarding deficiencies in the procedural guidance for a recirculation pump runback event.

O8 Miscellaneous Operations Issues (90712)

- O8.1 (Closed) LER 1-99-012: Unit 1 reactor core isolation cooling (RCIC) system primary containment isolation valve (PCIV) was inoperable for a period that exceeded the Technical Specification allowed outage time. PECO identified that on two occasions the application of a tagging clearance inadvertently rendered the RCIC vacuum breaker outboard PCIV inoperable. The clearance removed the RCIC logic control power fuses which defeated the automatic isolation capability of the PCIV. Technical Specification 3.6.3 requires with one or more PCIVs inoperable, maintain at least one PCIV operable in each affected penetration that is open and restore or isolate the penetration within four-hours; otherwise, be in hot shutdown within the next 12-hours and in cold shutdown within the following 24-hours. During both instances, with the RCIC outboard PCIV open and inoperable, the remedial actions required by Technical Specification 3.6.3 were not implemented. This Severity IV violation is being treated as a Non-Cited Violation (**NCV 05000352/1999009-01**), consistent with Section VII.B.1.a of the enforcement policy. This violation is in the PECO corrective action program as PEP I0010301.

The inspector performed an in-field inspection of the issue and determined that a deficient RCIC clearance prepared in 1996 was duplicated for a similar task in 1999. The root cause for these events was personnel error during clearance preparation, review, and approval. PECO's corrective actions included preventing future duplication of historical clearances and conducting operator training on the clearance and tagging manual requirements for proper review, approval, and authorization of clearances. A long term corrective action is to develop an approved clearance library for all emergency core cooling systems motor operated valves.

II. Maintenance

M1 Conduct of Maintenance

- M1.1 General Comments on Maintenance Activities (62707)

The inspectors observed selected maintenance activities to determine whether approved procedures were in use, technical specifications were satisfied, maintenance was performed by knowledgeable personnel, and post-maintenance testing was appropriately completed.

The inspectors observed portions of the following work activities:

- 214/224B Load Center Tie Breaker Replacement - November 11, 1999;
- C0188150 - NLI-1/2 Spent Fuel Shipping Cask Load - November 15 - 17, 1999;
- D24 EDG 5-Year Maintenance Overhaul - December 13 - 17, 1999.

Observed maintenance activities were conducted well using approved procedures, and were completed with satisfactory results. Communications between the various work and support groups were good and supervisor oversight was good.

M1.2 General Comments on Surveillance Activities (61726)

The inspectors observed selected surveillance tests to determine whether approved procedures were in use, test instrumentation was properly calibrated and used, technical specifications were satisfied, testing was performed by knowledgeable personnel, and test results either satisfied the acceptance criteria or were properly dispositioned.

The inspectors observed portions of the following surveillance activities:

- ST-6-092-365-0, Inoperable Unit 1 Safeguards Power Supply Actions for Both Units - November 9, 1999;
- ST-6-092-312-1, D12 Diesel Generator Slow Start Operability Test Run - November 9, 1999;
- RT-6-055-340-2, Unit 2 HPCI Turbine Hydraulic Control System Operability Test - December 13, 1999;
- ST-2-051-107-1, Div III RHR (LPCI) Logic System Functional - Non-outage - December 14, 1999;
- ST-6-092-313-1, D13 Diesel Generator Slow Start Operability Test Run - December 14, 1999;
- ST-6-051-233-1, Unit 1 1C RHR Pump, Valve, and Flow Test - December 16, 1999;
- RT-6-092-318-2, D24 Diesel Generator Abbreviated Run-in Test - December 17, 1999.

Observed surveillance tests were conducted well using approved procedures and were completed with satisfactory results. Communications among the various work and support groups were good and supervisor oversight was good.

M1.3 Unit 2 - Outboard MSIV Solenoid Failure

a. Inspection Scope (61726)

The inspector monitored and observed PECO's process to resolve and repair a defective DC powered air solenoid associated with the 2B MSIV opening and closing mechanism.

b. Observations and Findings

On November 13, 1999, an equipment operator performing rounds in the auxiliary equipment room identified a low current reading on the DC pilot solenoid associated with the 2B outboard MSIV. The engineering staff determined that while the DC solenoid had failed, the MSIV remained operable because the redundant AC solenoid was energized and the DC solenoid was failed in a safe condition.

The engineering staff developed special procedure, SP-205, "HV-041-2F028B DC Solenoid Replacement," to replace the solenoid. The plant operations review committee (PORC) performed a thorough review of the special procedure. The inspector noted that PORC raised challenging questions and engaged the engineering staff in good

discussions. The failed solenoid was subsequently replaced with no problems encountered.

c. Conclusions

PECO's engineering, maintenance, and operations staffs demonstrated careful planning and execution of work to replace, at power, a failed solenoid valve for a Unit 2 outboard MSIV.

V. Management Meetings

X1 Exit Meeting Summary

The inspector presented the inspection results to members of plant management at the conclusion of the inspection on January 5, 2000. The plant manager acknowledged the inspectors' findings. The inspectors asked whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

X3 Other NRC Activities

On November 30, 1999, the Chairman of the NRC, Dr. Richard A. Meserve, visited the Limerick Generation Station. During his visit, the Chairman met with PECO plant management and toured the facility.

INSPECTION PROCEDURES USED

IP 37550:	Engineering Inspection
IP 37551:	Onsite Engineering
IP 61726:	Surveillance Observation
IP 62707:	Maintenance Observation
IP 71707:	Plant Operations
IP 71750:	Plant Support Activities
IP 73753:	In-service Inspection
IP 81700:	Physical Security Program for Power Reactors
IP 83750:	Occupational Radiation Exposure
IP 90712:	In-office Review of Written Reports
IP 90713:	Review of Periodic and Special Reports
IP 92904:	Follow up - Plant Support
IP 93702:	Prompt On-site Response to Events at Operating Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed

NCV 05000352/1999009-01 Unit 1 RCIC system PCIV being inoperable for a period that exceeded the Technical Specification allowed outage time. (Section O8.1)

Closed

LER 05000352/1-99-012: Unit 1 RCIC system PCIV being inoperable for a period that exceeded the Technical Specification allowed outage time. (Section O8.1)

Discussed

None

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CRS	Control Room Supervisor
EDG	Emergency Diesel Generator
FW	Feedwater
GP	General Procedure
HPCI	High Pressure Coolant Injection
LER	Licensee Event Report
LPCI	Low Pressure Coolant Injection
MSIV	Main Steam Isolation Valve
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
OT	Operational Transient
PCIV	Primary Containment Isolation Valve
PECO	PECO Energy
PEP	Performance Enhancement Process
PORC	Plant Operations Review Committee
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report