

October 27, 2000

EA-00-0240

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
05000352/2000-007, 05000353/2000-007

Dear Mr. Rainey:

On September 30, 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 October 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, the NRC identified three violations that were evaluated under the significance determination process and were determined to be of very low safety significance (Green). These issues have been entered into your corrective action program and are discussed in the summary of findings and in the body of the attached inspection report. All three of these issues identified were determined to involve violations of NRC requirements, but because of their very low safety significance the violations are not cited. If you contest these non-cited violations, 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; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Limerick Generating Station.

Mr. G. Rainey

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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 05000352/2000-007, 05000353/2000-007

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REGION 1

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

Report No: 05000352/2000-007, 05000353/2000-007

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

Facility: Limerick Generating Station, Units 1 and 2

Location: Evergreen and Sanatoga Roads
Sanatoga, PA 19464

Dates: August 13, 2000 to September 30, 2000

Inspectors: A. Burritt, Senior Resident Inspector
B. Welling, Resident Inspector
D. Cullison, Resident Inspector
L. Peluso, Health Physicist
J. Jang, Sr. Health Physicist

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

SUMMARY OF FINDINGS

IR 05000352/2000-007, 05000353/2000-007; on 08/13-09/30/2000; PECO Energy; Limerick Generating Station; Units 1 and 2; Maintenance Rule Implementation, Post Maintenance Testing.

This report covered a seven-week period of resident inspection and announced inspections by a regional health physicist and senior health physicist. The inspection identified three Green findings, all which were non-cited violations. The significance of issues is indicated by their color (Green, White, Yellow, Red) and was determined by the Significance Determination Process (SDP) in Inspection Manual Chapter 0609 (See Attachment 1). Findings for which the SDP does not apply are indicated by “no color” or by the severity level of the applicable violation.

Cornerstone: Mitigating Systems Integrity

- Green - The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick’s emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick’s Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
- Green - PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the “A” auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system’s redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
- Green - PECO technicians failed to use appropriate procedural controls during troubleshooting and made all Unit 1 average power range monitors (APRMs) inoperable. Specifically, required post maintenance tests were not performed, to confirm the accuracy of the APRMs was within required tolerances, when local power range monitors (LPRMs) were returned to service following the troubleshooting activities. The LPRMs had not been calibrated and adversely affected accuracy of the APRMs. This finding affects the Mitigating Systems Cornerstone and is considered to have very low safety significance because the application of inaccurate LPRMs inputs to the APRMs resulted in more conservative reactor protection trips. This issue was a violation of Technical Specification 6.8.1.d. and is being treated as a Non-Cited Violation. (Section 1R19)

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Report Details

Summary of Plant Status

Unit 1 began this inspection period operating at 100% power and remained at that power level except for brief periods for planned testing and control rod pattern adjustments.

Unit 2 began this inspection period operating at 100% power and remained at that power level except for brief periods for planned testing and control rod pattern adjustments and the following:

September 9 Power was reduced to approximately 30% following the trip of the 'A' recirculating pump and returned to 100% on September 12.

1. REACTOR SAFETY Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment - Walkdowns (71111.04)

a. Inspection Scope

The inspectors performed a partial equipment alignment of the A, B, C emergency service water systems while the D emergency service water system was out of service. This inspection 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

.1 Tour Plant Areas Important to Reactor Safety

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:

- Unit 1 high pressure coolant injection room (fire area 34)
- Unit 2 reactor core isolation cooling pump room (fire area 56)
- 2C battery room (fire area 5)
- 2D battery room (fire area 6)

.2 Observe Fire Drill

The inspectors observed a fire drill to evaluate the readiness of the PECO's fire brigade to fight fires.

b. Issues and Findings

There were no findings identified

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

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

- Control rod transponder card failure (PEP I0011523)
- Suppression pool clean up pump multiple trips (A1274208)
- "A" Auxiliary Equipment Room Supply Fan Trip (PEP 10011452)

b. Issues and Findings

Unit 1 Suppression Pool Cleanup System

The inspector identified the Unit 1 suppression pool cleanup system was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. Specifically, Action Request A1274208, initiated on July 11, 2000, identified that the suppression pool cleanup pump tripped repeatedly. As of the end of the inspection period the suppression pool cleanup pump performance problem had not been completely resolved.

The inspector identified that since the non-safety related suppression pool cleanup system was explicitly used as a method to reduce excess suppression pool water inventory in emergency operating procedure T-102, "Primary Containment Control," 10 CFR 50.65 requires the suppression pool cleanup system to be included within the scope of Limerick's Maintenance Rule program. The inspector determined that the system had previously been included within the scope of Limerick's Maintenance Rule program, but PECO removed this system from their Maintenance Rule program in mid-1999 based on their determination that the system was not a significant contributor toward the performance of the T-102 suppression pool level control strategy. In response to the inspector's finding, PECO initiated PEP I0011668 to address the incorrect interpretation of the 10 CFR 50.65 requirement for systems explicitly addressed in the emergency operating procedures. PECO also identified other systems that were incorrectly removed from Limerick's Maintenance Rule program. Subsequently, PECO revised the Limerick Maintenance Rule program to include the suppression pool clean-up system and the other previously excluded systems. These other previously excluded system were of similar risk significance as the suppression pool clean-up system.

10 CFR 50.65 (b)(2) requires, in part, that the scope of the monitoring program specified in paragraph (a)(1) shall include non-safety related structures, systems, and components that are relied upon to mitigate accidents or transients or are used in plant emergency operating procedures.

Contrary to the above, from mid-1999 to July 2000, PECO failed to include the suppression pool clean-up system within the scope of the monitoring program specified in 10 CFR 50.65 (a)(1). The suppression pool clean-up system is a non-safety related system used in Limerick's emergency operating procedures.

This issue is considered to be more than minor because if the suppression pool clean-up system had remained out of the scope of the maintenance rule program, problems with this system could have become a more safety significant concern. This issue was considered to have very low safety significance (Green) using the significance determination process because there were other methods to remove excess inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2). and is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy. This violation is documented in PECO's corrective action program as performance enhancement program PEP I0011668 **(NCV 05000352,353/2000007-01)**

"A" Auxiliary Equipment Room Supply Fan Trip

The inspector identified that PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. Specifically, on June 8, 2000, the "A" auxiliary equipment room ventilation supply fan tripped coincident with starting of a large electrical load on an unrelated electrical bus. The fan was restarted and although the fan failure was recorded in the unified control log, the operators did not prepare an Action Request (A/R) and enter the failure into PECO's corrective action system. Since this trip was not documented in PECO's corrective action system, PECO did not investigate the cause of the fan trip. The auxiliary equipment room ventilation system is a support system for a number of safety-related systems necessary to mitigate design basis events. An auxiliary equipment room ventilation system failure could result in other safety-related systems not functioning due to adverse environmental conditions.

Following discussions with the inspector in late June 2000, PECO added the fan failure in their corrective action system. Nevertheless, PECO's evaluation of the failure was still in progress when the fan tripped again on July 19, 2000. PECO's subsequent evaluation identified an underlying problem with the fan's temperature controller power supply. The power supply was susceptible to failure during electrical perturbations that would occur during a response to transient or accident conditions.

10CFR 50, Appendix B, Criterion V requires in part that activities affecting quality shall be accomplished in accordance with procedures.

PECO procedure AG-CG-026.2, "Corrective Maintenance Action Request Initiation and Processing," requires the following:

- 5.1.1 - All plant personnel are responsible for the prompt identification of conditions adverse to plant safety, such as failures, malfunctions, deficiencies, deviations, defective material, and equipment nonconformance.
- 5.1.3 - Personnel who identify problems are responsible for notifying shift management to review/verify the problem, documenting such notification in the Action Request (A/R) and process accordingly.

On June 8, 2000, contrary to the above, PECO failed to follow procedure AG-CG-026 and properly document the "A" auxiliary equipment room ventilation supply fan trip, an activity affecting quality. Specifically, operators did not initiate an action request, for a trip of the "A" auxiliary equipment room supply fan. Since this trip was not documented in an action request, PECO did not investigate the cause of the fan trip.

This issue is more than minor and had a credible impact on safety since in the period June 8 - July 19, 2000, the "A" auxiliary equipment room ventilation system was susceptible to failure during electrical bus perturbations that would occur during response to a transient or accident conditions. The issue was considered to have very low safety significance (Green) using the significance determination process because the "B" auxiliary equipment room ventilation system remained functional thereby maintaining the overall system degraded but available. This issue was a violation of 10 CFR 50 Appendix B Criterion V. This violation is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy. This violation is documented in PECO's corrective action program as performance enhancement program PEP I0011452. **(NCV 05000352,353/2000007-03)**

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:

- "D" emergency service water system solenoid replacements
- 2A core spray system outage
- Unit 2 high pressure coolant injection system suppression pool suction valve emergent repairs

b. Issues and Findings

There were no findings identified.

1R14 Personnel Performance During Nonroutine/Transient Plant Evolutions (71111.14)

a. Inspection Scope

On September 9, 2000, the 2A recirculation pump tripped and reactor power was lowered to approximately 32% per plant procedures. The inspectors reviewed the operators' response to the trip of the 2A recirculation pump. In addition, the inspectors observed the performance of operations personnel during single loop operations and the restart of the 2A recirculation pump on September 11, 2000.

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:

- Unit 1 average power range monitors after not performing gain adjustment verifications and channel checks following the return of uncalibrated local power range monitors to service
- 1B residual heat removal system with minimum flow valve stroke time concerns
- Unit 2 high pressure coolant injection system with missing thermal insulation

b. Issues and Findings

There were no findings identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors reviewed aggregate impact of Unit 2 control room deficiencies. Specifically the inspector evaluated the cumulative effect of deficiencies that could complicate operator actions following an event. The inspector also performed the following verifications:

- PECO's definitions of operator workarounds and operator challenges established an appropriate threshold;
- Deficiencies were identified at an appropriate threshold and incorporated into the corrective action program;
- Operation's tracked and reported operator workarounds and challenges to plant management.

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:

- D22 emergency diesel generator 2 year overhaul
- Unit 2 high pressure coolant injection system flow controller replacement
- Unit 1 average power range monitors (APRM) following local power range monitor (LPRM) troubleshooting/repairs
- B control room emergency fresh air system damper work

b. Issues and Findings

The inspector determined that technicians did not follow procedures when several Unit 1 LPRMs were returned to service following troubleshooting activities. As a result of not following procedures, the LPRMs had not been calibrated and tested prior to placing them in service. This resulted in making all channels of the APRMs inoperable.

The inspector identified the condition on August 7, 2000, when the inspector observed that reactor power as indicated by the APRM was higher than that indicated by diverse reactor power instrumentation. The APRM accuracy was affected when the LPRMs were returned to the operate status (two per APRM channel) without performing compensating adjustments to the APRMs. The APRMs derive an average neutron power from multiple LPRMs to provide indication and reactor protection trip functions. The LPRM inputs were subsequently bypassed, restoring APRM operability until appropriate testing and calibration was performed.

The inspector determined that these LPRMs were returned to service to monitor their response when the instrument and control technicians, who were uncertain as to whether they had corrected several instrument problems, finished their troubleshooting. This was done with the concurrence of the licensed operator but not in accordance with applicable procedural guidance. The inspector identified that all of the APRMs were inoperable when these LPRMs were returned to service since the APRM gain adjustment verifications and channel checks were not performed. These surveillance activities are required by Technical Specifications (TS) and should have been performed when the input configuration to the APRM instruments was changed.

TS 6.8.1.d requires, in part, that written procedures shall be implemented covering activities including surveillance and test activities of safety-related equipment. PECO procedure AG-CG-026.10, "Minor Maintenance," requires, in part, the following:

- 7.2.4 - If at any time prior to or during the performance of minor maintenance the work scope is such that it will violate the criteria for minor maintenance, then the work shall be stopped. The standard maintenance work order and process shall be pursued.
- 4.1.2 - Minor maintenance shall not include work performed on structures, systems, or components that are classified as safety related or TS and a detailed procedure is not available.

On August 7, 2000, contrary to the above, technicians failed to stop a troubleshooting/repair activity when it no longer met the criteria for the minor maintenance process. Specifically, technicians placed eight LPRMs in the operate mode without a detailed procedural instruction to cover this portion of the activity.

Although the APRMs were restored to operable status within the technical specification allowed outage time, the inspector determined that the technicians actions were not consistent with PECO procedures. The issue of inadequate use of procedures is more than minor because it had an actual impact on safety, caused all APRMs to be inoperable at the same time. The issue was considered to have very low safety significance (Green) using the significance determination process because the actual application of inaccurate LPRMs inputs to the APRMs resulted in more conservative reactor protection trips. This issue was a violation of TS 6.8.1.d. and being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy. This violation is documented in PECO's corrective action program as performance enhancement program PEP I0011556. **(NCV 05000352/2000007-02)**

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

- ST-6-055-230-1, High Pressure Coolant Injection Pump, Valve, and Flow Test
- ST-6-043-391-2, Reactor Recirculation Single Loop Operation Temperature and Flow Check and ST-6-043-390-2, Reactor Recirculation Pump Idle Loop Startup Temperature and Flow Check
- ST-6-051-232-2, 2B Residual Heat Removal and Pump, Valve, and Flow Test

b. Issues and Findings

There were no findings identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed selected risk significant temporary modifications against the system design bases documentation to assess the adequacy of the 10 CFR 50.59 screening and to verify that the modifications did not affect system operability. Additionally, the inspectors verified, where possible, that the installations were consistent with the modification documentation and that the applicable drawings and procedures were updated. The inspectors also reviewed the post installation test results and the testing planned for after the removal of the modification. The following temporary plant alterations were inspected:

- Temporary Plant Alteration 00-00283: Monitored the residual heat removal flow transmitter and the condensate transfer pressure transmitter that provide a closing signal for the 1B residual heat removal pump minimum flow valve, HV-051-1F007B.
- Temporary Plant Alteration 00-01276: Bypassed the bearing temperature sensor on the "B" main control room chiller.

b. Issues and Findings

There were no findings identified.

2. **RADIATION SAFETY** **Cornerstone: Public Radiation Safety (PS)**

2PS2 Radioactive Material Processing and Transportation (71122.02)

a. Inspection Scope

.1 Radioactive Waste System Walk-down

The inspector reviewed the following liquid and solid radioactive waste processing systems, including a control panel review and facilities tour of accessible areas to verify that the current systems configuration and operation agree with the descriptions contained in the Final Safety Analysis Report (FSAR) and the Process Control Program.

- Reactor Water clean up (inaccessible)
- Spent fuel pool clean up (inaccessible)
- Floor drains
- Equipment drains
- Miscellaneous waste
- Solid waste processing (spent filter media collection/processing, waste sludge)

The inspector reviewed and toured abandoned liquid and solid waste processing components and systems (evaporator and the centrifuge) to determine method of lay-up and to verify that the current configuration is consistent with the descriptions contained

in the FSAR. The inspector reviewed administrative and physical controls to ensure that the equipment will not contribute to an unmonitored release path, affect operating systems, or be a source of unnecessary personnel exposure.

The inspector toured the radioactive waste storage facility to observe the condition of radioactive material storage areas and to determine whether appropriate postings and controls were maintained. The facility's inventory was also reviewed.

.2 Waste Characterization and Classification

PECO's procedures and methodology for waste characterization and classification were reviewed against 10 CFR 61.55 and 10 CFR 61.56. The inspector evaluated the following activities: the processes for transferring radioactive waste resin and sludge into high integrity containers; sampling for waste concentration averaging; and scaling factors used to determine hard-to-measure radio nuclides. The inspector reviewed radio-chemical sample analysis results for each of the radioactive waste streams from the past three years to determine the waste stream composition stability and determine if the scaling factors were valid between sample analysis.

.3 Shipment Preparation(s)

During August 21-25, 2000, PECO prepared and shipped one Type B Quantity and one Highway Route Control Quantity (HRCQ). The inspector observed and evaluated PECO's performance regarding the two shipments against 10 CFR 20, 61, 71, and 49 CFR 171-179 requirements. Observations for the Type B quantity included the packaging of liner #5 (containing irradiated hardware) into a shipping cask during 08/21-22/00; surveying, labeling, and marking of the shipping cask (3-55); and placarding of the conveyance. Observations for the HRCQ included surveying, labeling, marking of the shipping cask (3-55), and placarding of the conveyance. The waste manifest, including emergency instructions and vehicle checks, was reviewed for both shipments. The inspector observed transfer of shipping papers to the driver of the conveyance for both shipments, and reviewed the Certificate of Compliance associated with shipping cask (3-55). The inspector evaluated training of radwaste personnel (especially shipping personnel) as required by NRC Bulletin 79-19 and 40 CFR 172, Subpart H. Radwaste personnel were observed and interviewed to determine knowledge of shipping regulations and package preparation requirements for public transport.

The inspector reviewed a total of five non-excepted package shipping records. The review included a dewatered condensate resin (identification number-99-0002), a dewatered powdered resin (99-0007), a dry active waste (00-55), and two shipping records on metal irradiated hardware (00-0004 and 00-0005).

.4 Identification and Resolution of Problems

The following PEPs were reviewed by the inspector:

- I0011496 (LHRA door)
- I001322 (plant leakage)
- I0011486 (H-3 in clean waste oil)
- I0011372 (oily waste interceptors)

The inspector reviewed the vendor audit of Chem-Nuclear Systems (now GTS Duratek) conducted by the Nuclear Utilities Procurement Issues Council (NUPIC).

.5 Radioactive Material Control Program

The inspector reviewed the following documents and activities to ensure that PECO's surveys and controls were adequate to prevent the inadvertent release of licensed material to the public domain.

- the methods used for control, survey, and release from the Radiologically Controlled Area;
- the most recent calibration results for the radiation monitoring instrumentation (small articles monitor), including the (a) alarm setting, (b) response to the alarm, and (c) the sensitivity;
- PECO's criteria for the survey and release of potentially contaminated material; and
- associated procedures and records to verify for the lower limits of detection.

The review was against criteria contained in 10 CFR 20, NRC Circular 81-07, NRC Information Notice 85-92, NUREG/CR-5569, Health Position Database (Positions 221 and 250), and PECO's procedures.

b. Issues and Findings

There were no findings identified.

2PS3 Radiological Environmental Monitoring Program (REMP) (71122.03)

a. Inspection Scope

The inspector reviewed the following documents and conducted the following activities to evaluate the effectiveness of PECO's REMP. The requirements of the REMP were specified in the Technical Specification/Offsite Dose Calculation Manual (TS/ODCM):

- the 1999 Annual REMP Report, including analytical data for 2000 REMP samples;
- the most recent ODCM (Revision 20, September 9, 1999) and technical justifications (50.59 safety evaluation) for ODCM changes, including sampling locations;

- the most recent calibration results of the primary (at 30-ft., 175-ft., and 270-ft.) and backup (at 30-ft., 159-ft., and 304-ft.) meteorological monitoring instruments for wind direction, wind speed, and delta temperature;
- availability of the meteorological monitoring instruments from November 1999 to May 2000;
- the most recent calibration results for all five TS required air samples;
- PECO's Quality Control evaluation of the interlaboratory comparison program and the corrective actions for any deficiencies;
- implementation of the environmental thermoluminescent dosimeters (TLDs) program;
- corrective actions for the PEP No. I0011486, NRC Tritium Sampling Issue;
- 2000 REMP self-assessment;
- the 1999 Quality Assurance audit (Audit Number CA-99-003) for the REMP/ODCM implementations and the vendors' laboratory audit (EO-2851/ NUPIC, Audit Number 16331);
- the Land Use Census procedure and the 1999 results;
- walk-down for determining whether air samplers, milk farms, composite water sampler, and TLDs were located as described in the ODCM and for determining the equipment material condition;
- observation of milk and water sampling techniques; and
- associated REMP procedures, including the vendor's analytical procedures.

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 reactor coolant system leakage (January 2000 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.

4OA2 Identification and Resolution of Problems

a. Inspection Scope

The inspector reviewed the actions taken by PECO in response to a trip of the "A" auxiliary equipment room ventilation supply fan on June 8, 2000.

b. Issues and Findings

Section 1R12 describes a Green finding in which a trip of the "A" auxiliary equipment room ventilation supply fan was not properly documented in PECO's corrective action system and resulted in continued operation of degraded equipment.

4OA3 Event Follow-Up (71153)

.1 (Closed) LER 1-00-003:

Twelve main steam safety relief valves (SRVs) failed to meet the 1% setpoint tolerance due to setpoint drift. The inspector performed an "in-office" review of this Licensee Event Report (LER) which documents the 'as found' setpoint testing results for all fourteen two stage SRVs removed during the 2000 Unit 1 refueling outage. The setpoint drift issue has been a recurring problem with two-stage SRVs and was the subject of a non-cited violation in NRC Inspection Report 50-352, 353/98-05. As part of the corrective actions for that violation, PECO replaced all two-staged valves with three-staged SRVs during the 2000 refueling outage at Unit 1. Since replacement of the valves was a planned corrective action for the previous violation, no additional action is warranted. This LER is closed.

4OA4 Cross Cutting Issues

Human Performance Problems

a. Inspection Scope

The inspector reviewed PECO's initial evaluation and corrective actions associated with a deficient troubleshooting activity that resulted in anomalous average power range monitor (APRM) indications (discussed in section 1R.19 of this report) and PECO's actions documented in PEP I0011556 to assess human performance and problem identification.

b. Issues and Findings

The inspector identified several human performance deficiencies were not addressed by PECO's evaluation or corrective actions. These deficiencies included the following:

- The reactor operator's failure to observe the anomalous APRM readings and initiate prompt corrective action;

- The reactor operator's failure to involve the control room supervisor in the decision to place the local power range monitors in operate as part of a troubleshooting procedure;
- The instrument and control technician's failure to recognize and stop the activity when they no longer met the applicable work control process criteria;
- The instrument and control technician's failure to involve their supervisor when unexpected troubleshooting results were obtained.

The PECO staff agreed with the inspector's assessment and plans to take additional corrective actions to address all issues listed above.

4OA5 Other

.1 Performance Indicator Data Collecting and Reporting Process Review (TI 2515/144)

a. Inspection Scope

The inspectors reviewed the performance indicator data collecting and reporting process for the following indicators:

- Occupational Exposure Control Effectiveness
- Physical Protection
- Emergency Preparedness

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 PECO management at the conclusion of the inspection on October 18, 2000.

The regional inspector presented the radioactive material control, processing, and transportation program inspection results to members of PECO management at the conclusion of the inspection on August 28, 2000.

The regional inspector presented radiological environmental monitoring program inspection results to members of PECO management at the conclusion of the inspection on September 1, 2000.

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

PARTIAL LIST OF PERSONS CONTACTED

PECO

D. Fay	Assessor, Nuclear Quality Assurance
K. Gallogly	Manager Experience Assessment
C. Gerdes	Manager, Chemistry/Radwaste
M. Golson	Manager, Radwaste/Environmental
H. Harmon	Physicist, Radwaste, RMSC
W. Harris	Manager, Radiation Protection
M. Kaminski	Manager, Technical Support, Radiation Protection
M. McCabe	Experience Assessment
J. Murphy	Physicist, Radwaste
J. Schnider	Radwaste Operations, Operations
L. Tolson	Health Physicist, Radiation Protection
J. Tucker	Manager, Operations
J. von Suskil	Vice President, Limerick Generating Station

NRC

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

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

NCV 05000352,353/2000007-01	Suppression Pool Cleanup System Not in the Scope of the Maintenance Rule Program
NCV 05000352/2000007-02	Inadequate Procedure Use During Troubleshooting of Unit 1 Local Power Range Monitors
NCV 05000352,353/2000007-03	Inadequate Procedure Use For an Auxiliary Equipment Room Fan Trip

Closed

LER 1-00-003	Twelve main steam safety relief valves (SRVs) failed to meet the 1% setpoint tolerance due to setpoint drift.
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LIST OF ACRONYMS USED

APRM	average power range monitors
CFR	code of federal regulation
FSAR	Final Safety Analysis Report
HRCQ	Highway Route Control Quantity
LER	Licensee Event Report
LPRM	local power range monitors
NCV	Non-cited violation
NRC	Nuclear Regulatory Commission
NUPIC	Nuclear Utilities Procurement Issues Council
ODCM	Offsite Dose Calculation Manual
PEP	Process Enhancement Program
REMP	Radiological Environmental Monitoring Program
RHR	Residual Heat Removal
SRV	safety relief valves
TLD	Thermoluminescent dosimeters
TS	Technical Specifications

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>.