



PECO ENERGY

David R. Helwig  
Vice President  
Limerick Generating Station

PECO Energy Company  
Limerick Generating Station  
PO Box 2300  
Sanatoga, PA 19464-0920  
215 327 1200, Ext. 3000

10 CFR 2.201

May 9, 1994  
Docket Nos. 50-352  
50-353  
License Nos. NPF-39  
NPF-85

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

SUBJECT: Limerick Generating Station, Units 1 and 2  
Reply to a Notice of Violation  
NRC Combined Inspection Report Nos. 50-352/94-02  
and 50-353/94-02

Attached is PECO Energy Company's reply to a Notice of Violation for Limerick Generating Station, Units 1 and 2, which was contained in your letter dated March 11, 1994. The cited violations involved (1) failure of an Instrumentation and Controls technician to properly follow a Surveillance Test procedure when a mismatch was discovered between a procedure step and plant conditions; and (2) failure to comply with Administrative procedure A-12, "Ignition Source Control Procedure." The attachment to this letter provides a restatement of the violations followed by our reply.

If you have any questions or require additional information, please contact us.

Very truly yours,

KOS:cah

Attachment

cc: T. T. Martin, Administrator, Region I, USNRC w/attachment  
N. S. Perry, USNRC Senior Resident Inspector, LGS "

9405160144 940509  
PDR ADDCK 05000352  
PDR

IEO1  
11

Reply to a Notice of Violation

Restatement of the Violations

During NRC inspection on January 19 - February 22, 1994, two violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, these violations are listed below:

- A. Technical Specification (TS), Section 6.8.1, states, in part, written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, recommends the establishment of administrative procedures including procedures covering procedure adherence and temporary change methods.

Administrative Procedure A-3, Revision 15, Temporary Changes to Approved Procedures and Partial Procedure Use, Step 7.2.8, written to comply with TS 6.8.1, states, in part, the person discovering the mismatch between conditions and procedure shall inform their line supervision. The problem may be resolved by one of the following alternatives:

1. Restore the plant, system, or equipment to conditions that permit use of the procedure.
2. Delay performance of the action or operation until the conditions are suitable for performance.
3. Execute a Temporary Change to the procedure.
4. Revise the procedure to correct the discrepant condition.

Contrary to the above, on February 12, 1994, while performing Surveillance Test (ST)-2-036-704-1, Excess Flow Check Valve Functional Test, an instrumentation and controls (I&C) technician discovered a mismatch between step 6.1.3.1G, which required verifying that the TRIP LED on LIS-42-IN680C was off, when in fact, the TRIP LED was on, and corrected the mismatch by performing a procedural step out of sequence. The problem was not resolved by one of the following alternatives: 1) restoring the equipment to conditions that permit use of the

procedure; 2) delaying performance of the action until the conditions are suitable for performance; 3) executing a temporary change to the procedure; or 4) revising the procedure to correct the discrepant condition.

This is a Severity Level IV Violation (Supplement I).

B. Technical Specification (TS), Section 6.8.1, states, in part, written procedures shall be established, implemented, and maintained covering implementation of the Fire Protection Program. Administrative Procedure A-12, Revision 5, Ignition Source Control Procedure, was written to comply with TS 6.8.1.

Contrary to the above, the requirements of A-12 were not met as evidenced by the following examples:

1. Step 7.2.3 of A-12 requires the minimum fire watch requirements are one dedicated individual for each ignition source operation. However, on February 10, 1994, the inspectors observed an individual on a platform in the Unit 1 reactor building performing a grinding operation (ignition source activity per step 4.2 of A-12) without a dedicated fire watch present.
2. Step 7.4.1 of A-12 requires that the ignition source worker shall insure that at the completion of the portion of the job which uses the ignition source, that the ignition source is removed or made passive. In the case of a welding machine, this can be achieved by turning it off or disconnecting the welding lead sets. However, on February 18, 1994, the inspectors identified an unattended welding machine that was energized.
3. A-12, Appendix A, Precaution Check List items 3.b and c, requires that electrical equipment and combustible materials below or within about 35 feet of the ignition source are protected (or removed in that case of combustibles) by fireproof material between the ignition source and the electrical equipment or combustible material. However, on February 17, 1994, the inspectors observed simultaneous grinding operations (ignition source activity) being performed in the upper level of the Unit 1 A RHR heat exchanger room. The grinding operations were carried out over open grating and no fireproof material was used to protect the areas adjacent to or underneath the grinding activity from the sparks that were being produced and which were falling down through the open grating to the other elevations of the RHR heat exchanger room where there were combustibles and electric equipment.

4. A-12, Appendix B, Dedicated Fire watch Instructions, step 10, requires that the fire watch shall know the location of the nearest phone and pager as listed on the ignition source control checklist. However, on February 18, 1994, the inspector questioned a fire watch assigned to observe a welding activity on an elevated platform, and determined that the fire watch was not knowledgeable of the location of the nearest phone and pager.

This is a Severity Level IV Violation (Supplement I).

Restatement of Concerns Identified in NRC Special Team Inspection Report 50-352/94-09 and 50-353/94-09

The team noted several instances where plant workers, primarily contractor workers, failed to adhere to PECO's administrative procedures governing control of combustible material and ignition sources. These findings were similar to, and an extension of, fire protection program problems identified in NRC inspection report 50-352/94-02 and 50-353/94-02 and for which a violation was issued. The team was concerned over the adequacy of contractor oversight by PECO in ensuring compliance with their site administrative procedures in this area.

Among the several deficiencies noted, two occurred in safety-related areas and therefore were of greater concern.

- o Oxygen and acetylene bottles were being stored in the common RHRSW/ESW tunnel. Contrary to administrative procedures, the bottles were stored along side each other without a fire barrier between them and the bottles were not restrained from tipping over.
- o During restart of Unit 1, combustible materials were present in a combustible free zone near the core spray injection valves. The inspector notified the fire protection group of the concern. The following day, the inspector identified that the materials were still present in the zone. Following identification of the concern again, the materials were removed. Further, the inspector determined that a health physics technician had also identified the deficient condition to the fire protection group.

Other noted conditions, prohibited by administrative procedures included: six instances of improperly secured compressed gas cylinders; combustible materials stored at the bottom of a reactor building stairwell; two instances where fire watches were using fire extinguishers with out-of-date inspection tags; two instances where unattended welding machines were left energized; and one

instance where a welder failed to take measures to catch hot slag from falling into the condenser bay despite instructions to do so on the ignition source permit for the welding activity.

### RESPONSE

#### Violation No. 1

#### Admission of the Violation

PECO Energy Company acknowledges the violation.

#### Reason for the Violation

On February 12, 1994, while performing Surveillance Test (ST) procedure ST-2-036-704-1, "Excess Flow Check Valve Functional Test", an Instrumentation and Controls (I&C) technician discovered a mismatch when performing step 6.1.3.1G, which required verifying that the TRIP LED on LIS-42-1N680C was off, when in fact, the TRIP LED was on. The I&C technician stopped performance of the ST procedure after noticing the illuminated LED, and an I&C supervisor was contacted at home via phone. The I&C supervisor determined that the trip unit LED was illuminated as a result of a simulated low level signal. He communicated to the technician that in order to clear the trip it would be necessary to increase the simulated signal by rotating the stable current adjustment knob clockwise. The I&C technician ended his communication with the supervisor and proceeded to clear the trip LED by increasing the simulated signal.

The I&C technician then proceeded to simulate a signal to LIS-42-1N680D in the same manner previously employed. A mismatch between expected and actual response was again received. The I&C technician then increased the stable current adjustment knob and cleared the LED utilizing information provided during the previous communication with the supervisor.

The cause of the failure to resolve the mismatch between the procedural steps in accordance with procedure A-3 was personnel error by the technician. The I&C technician did not fully understand the first unexpected response and proceeded with the ST procedure using the supervisor's guidance.

Contributing factors to the cause of this event are as follows:

- o The pre-job briefing was weak in that it did not provide a sufficient job overview to ensure task understanding. Additionally, the briefing should have emphasized that the ST



procedure requires a clockwise, vice the typical counter clockwise, rotation of the adjustment knob.

- o The I&C technician did not properly self-check.
- o Procedure ST-2-036-704-1 did not highlight the "clockwise" rotation of the stable current adjustment knob.

#### Corrective Actions Taken and Results Achieved

The I&C technician completed the performance of procedure ST-2-036-704-1 prior to realizing the need for a temporary change (TC) to the procedure. The I&C technician was counseled on his inappropriate actions.

#### Corrective Actions to Avoid Future Non-compliance

The I&C technician involved in this event was counseled on the importance of complying with procedures and performing adequate self-check, the importance of fully understanding unexpected responses prior to proceeding with an activity, and the importance of utilizing a TC when a procedural discrepancy is identified.

The I&C supervisor involved in this event was counseled on the importance of proper communication to ensure complete understanding of the task being performed prior to giving technical guidance.

Procedure ST-2-036-704-1 was temporarily changed to incorporate human factor enhancements. A permanent revision to this ST procedure was completed. Similar Unit 1 and Unit 2 I&C procedures are being reviewed for the incorporation of comparable human factor enhancements.

An I&C group all-hands meeting was held to discuss this event to emphasize the importance of procedural compliance, and proper self-check and attention to detail.

An I&C Training Bulletin was issued to I&C supervision emphasizing the lessons learned from this event including the importance of utilizing an appropriate administrative control (e.g., TC) upon discovering a mismatch between conditions and procedure. This I&C Training Bulletin was utilized for work group discussion of this incident.

In addition, a training bulletin will be issued to all I&C supervision by June 1, 1994. This bulletin will emphasize the need to ensure adequate task understanding during pre-job briefings and the need to fully understand the task being performed and the actual conditions leading up to the request for assistance prior to providing guidance over the phone.

Date When Full Compliance was Achieved

Full compliance was achieved on February 12, 1994, when procedure ST-2-036-704-1 was completed.

Violation No. 2

Admission of the Violation

PECO Energy Company acknowledges the violation with the exception of the first example in the Notice of Violation. Discussions with the appropriate supervisor, interviews with the personnel involved and review of the documentation of the hot work activities in progress in the area were performed by the Industrial Risk Management (IRM) group. The review revealed that there was a single fire watch observing two hot work activities in the area and that each work activity was within the fire watch's line-of-sight. Appropriate fire watch sign-in was made and IRM personnel have concluded that both jobs were properly covered.

Reason for the Violation

The cause of the identified violations of procedure A-12, "Ignition Source Control" was personnel error on the part of the workers due to less than adequate accountability and enforcement of management expectations. Additionally, the immediate contractor supervision oversight of the workers was less than adequate.

Corrective Actions Taken and Results Achieved

The following corrective actions were taken for the identified violations of procedure A-12 (including those described in NRC Special Team Inspection Report 50-352/94-09 and 50-353/94-09) to return to compliance with the ignition source control requirements.

1. Upon identification of the grinding operation being performed without a fire watch, a reinforcement of the A-12 fire watch rules and requirements was immediately communicated to the supervision of contractor and PECO organizations performing hot work during the Unit 1 refueling outage. IRM personnel conducted additional inspections of hot work in progress. Followup briefings were held with all hot work group supervision and workers to re-enforce the A-12 fire watch rules and requirements.
2. The unattended welding machine was immediately turned off and the work group supervisor was notified by IRM personnel.

3. The grinding operation in the RHR heat exchanger area was immediately stopped following notification of the work group by IRM personnel. The work was not resumed until the floor grating area below the grinding operation was covered with an approved spark/hot work cover material.
4. The fire watch observing the welding operation on the elevated platform was immediately reinstructed on the fire watch requirement to know the location of the nearest phone and pager. The location of the nearest pager and phone was also identified to the fire watch.
5. IRM personnel identified the owners of the improperly stored oxygen and acetylene bottles, mainly contractor personnel, and explained the proper method of bottle storage, reinforcing the requirements as stated in procedure A-12. IRM personnel directed the contractor personnel and assured that all bottles were properly stored in the pipe tunnel.
6. When the inspector informed an IRM group member of combustible materials in a Combustible Free Zone (CFZ), a second IRM group member was contacted to address the concern. Due to less than adequate communication regarding the location of the CFZ in question between the inspector and two IRM group members, the combustible materials were not removed until the following day.
7. The other identified violations of procedure A-12 (e.g. improperly stored compressed gas cylinders, out-of-date fire extinguishers being used, unattended welding machine left on) were immediately corrected when identified to IRM personnel. Personnel were informed of the violations and expectations regarding compliance with procedure A-12 were reinforced.

#### Corrective Actions to Avoid Future Non-compliance

Management expectations for strict compliance with A-12 and fire watch requirements were reinforced to PECO Energy and contractor supervision and workers. IRM personnel completed additional walkdowns of inprogress hot work activities during the Unit 1 Refueling outage and recruited, trained and utilized other key PECO Energy personnel in the observation of inprogress hot work.

A new label for compressed gas bottles was developed to reinforce the requirements for compressed gas bottle storage. The labels specifically highlight the deficiencies noted in this report.



A programmatic review of the Fire Protection Program and development of a program improvement plan will be completed by June 30, 1994 to enhance and streamline the procedures based upon the industry's best practices and review of other effective programs outside the nuclear industry.

Contract provisions for vendors involved with hot work will be revised to include penalty clauses for violations of station procedures by September 1, 1994.

A briefing on the revised A-12 procedure will be presented to all PECO Energy and contractor supervision involved in hot work activities prior to the next Refueling Outage. This briefing will outline the changes to and current requirements of procedure A-12 as well as reinforce management expectations for strict compliance with A-12 and fire watch requirements.

Date When Full Compliance was Achieved

Full compliance for the identified violation was achieved on February 18, 1994 when all immediate corrective actions were completed. The concerns described in the Special Inspection Report were promptly corrected when identified to IRM.