

## PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

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January 7, 1993

DAVID R. HELWIG  
VICE PRESIDENT  
LIMERICK GENERATING STATION

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. 50-352/92-27  
and 50-353/92-27

Attached is Philadelphia Electric Company's reply to Notices of Violation specifying two violations for Limerick Generating Station (LGS) Units 1 and 2 which were contained in the NRC Combined Inspection Report Nos. 50-352/92-27 and 50-353/92-27 dated December 7, 1992.

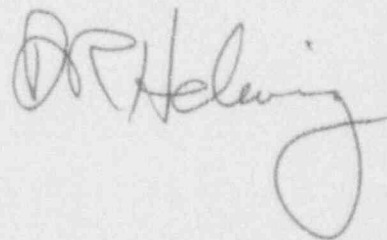
The cited violations involved failure to take adequate corrective action regarding procedural compliance, and failure to take prompt corrective actions regarding identified failures of check valves in the Reactor Core Isolation Cooling system.

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 do not hesitate to contact us.

Very truly yours,

120123



JLP/DCS:cah

Attachment

cc: T. T. Martin, Administrator, Region I, USNRC  
T. J. Kenny, USNRC Senior Resident Inspector, LGS

9301130027 930107  
PDR ADOCK 05000352  
G PDR

JED 1/1

bcc: D. M. Smith - 52C-7	w/attachment
G. R. Rainey - 52A-6	w/attachment
W. G. MacFarland - 61A-11	w/attachment
J. Doering, Jr. - ADM5-1	w/attachment
R. W. Boyce - ADM2-A	w/attachment
J. A. Muntz - SSB3-1	w/attachment
G. J. Madsen - SMB2-4	w/attachment
J. B. Cotton - 53A-1	w/attachment
E. W. Callan - SMB3-1	w/attachment
J. J. McElwain - SSB4-3	w/attachment
G. J. Beck-52A-5	w/attachment
NRB Chairman - 53A-1	w/attachment
Secretary, NCB - 51A-13	w/attachment
PA DER BRP Inspector - SMB2-4	w/attachment
Commitment Coordinator - 52A-5	w/attachment

Reply to a Notice of Violation

Violation A

Restatement of the Violation

10 CFR 50 Appendix B, XVI, Corrective Action, states in part, "In the case of significant condition adverse to quality, measures (for corrective action) shall assure that the cause of the condition is determined and corrective action taken to preclude repetition."

Contrary to the above, the Licensee's corrective actions did not assure that the cause of a condition was determined and that corrective actions precluded repetition. Specifically, on September 15 1992, after the performance of preventive maintenance on a Paul Monroe Electro-Hydraulically operated butterfly valve, HV-76-011B, the inspector identified that the maintenance worker did not follow procedure IC-11-00093 while precharging the valve's accumulator. The maintenance worker did not fully understand the pressure/temperature graph for pressurizing the accumulator and continued working without clarification for the misunderstood portion of the procedure. This is a similar event to violations 50-352/92-03-01 and 50-352/92-11-01, where maintenance workers did not fully understand portions of specified procedures and continued working causing them to violate the procedures. (On April 23, 1992 and July 2, 1992, PECO acknowledged these violations and responded, stating, "Full compliance was achieved on February 13, 1992 and again on April 23, 1992.")

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

Response

Admission of Violation

Philadelphia Electric Company acknowledges the violation.

Reason for the Violation

The cause of the event on September 15, 1992, was procedural non-compliance due to the format of the temperature versus pressure graph and the maintenance technician's unfamiliarity with the procedure. This was previously an Instrumentation and Controls (I&C) procedure. Additionally, the technician did not stop work when a procedural ambiguity was encountered.

Extensive corrective actions have been initiated and are continuing. These corrective actions have included communication of management expectations, team meetings, continuing training, all hands meetings, increased management oversight, and increased worker involvement in the procedure process. These corrective actions were not fully effective in precluding the September 15, 1992 event.

#### Corrective Actions and Results Achieved

For the specific event on September 15, 1992, the workers reperformed the preventive maintenance task on butterfly valve HV-76-011B in accordance with procedure IC-11-00093 with the result being the accumulator pressurized within its specified tolerance.

A review was undertaken to determine why previous corrective actions did not prevent the September 15, 1992 event. The results of our analysis indicate that the adverse trend has been reversed by the corrective actions taken in response to violations 50-352/92-03-01 and 50-352/92-11-01:

1. Workers now routinely initiate procedure changes.
2. Technical adherence to procedures is improved.
3. Workers display improved ownership of procedures and accountability for procedure use.

#### Corrective Actions Taken to Avoid Future Non-Compliance

Previously initiated corrective actions will continue. Additional emphasis will be placed on event analysis and trending.

Monthly Maintenance management meetings have been initiated to review events, analyze trends, monitor corrective action effectiveness and increase awareness by involving all Maintenance/I&C Supervision in a team process for collaborative improvement in the overall execution of maintenance.

#### Date When Full Compliance was Achieved

Full compliance regarding preventive maintenance on butterfly valve HV-76-011B was achieved on September 15, 1992, when workers reperformed the task in accordance with procedure IC-11-00093 and achieved accumulator pressurization within specified tolerance. Ongoing actions discussed in the previous section will serve to achieve full worker procedure compliance.



Reply to a Notice of Violation

Violation B

Restatement of the Violation

10 CFR Appendix B, Criteria XVI, "Corrective Action," requires that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected.

Contrary to the above the following Reactor Core Isolation Cooling (RCIC) system valve failures were identified by PECO but not promptly corrected:

1. Primary containment isolation valve, 49-2F028, was identified to stick in the closed position on September 3, 1991. No corrective actions were taken until questioned by the NRC resident inspector. During troubleshooting activities on November 4, 1992, the valve stuck in the open position, preventing it from performing its containment isolation function.
2. On November 20, 1991 the RCIC vacuum breaker valve 049-2018 was identified to be sticking in the open position. No corrective actions were taken until an additional similar valve failure occurred and was questioned by the NRC resident inspectors.

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

Response

Admission of Violation

Philadelphia Electric Company acknowledges the violation.

Reason for the Violation

The reasons for this violation were as follows:

- a) The Responsible System Manager did not perceive that the benefit of working on the affected valves (49-2F028 and 49-2018), which were operable, outweighed the risk of extended system unavailability.

- b) Timely and aggressive troubleshooting of valve 49-2F018 was not performed commensurate with the valve's safety significance as a Primary Containment Isolation Valve (PCIV). This troubleshooting would have provided the System Manager with more data upon which to base the decision of corrective maintenance.
- c) The System Manager was unaware of the existence of 10CFR21 issues related to the Reactor Core Isolation Cooling (RCIC) system vacuum breaker valves. Knowledge of the 10CFR21 issues may have affected the decision to postpone corrective maintenance for valve 49-2018.

#### Corrective Actions and Results Achieved

The RCIC system PCIV 49-2F028 was declared inoperable and the appropriate Technical Specifications (TS) action to isolate the Primary Containment penetration was taken when the valve was discovered to be stuck in the open position on November 4, 1992. A RCIC system outage was scheduled to allow corrective maintenance on valve 49-2F028. Repair of the RCIC Vacuum Breaker Check Valves (including 49-2018) was also included in this outage.

Investigation revealed that corrosion product buildup caused valve 49-2F028 to become stuck in the open position. On valve opening, a ridge developed in the corrosion build up due to wear caused by disk chatter. When the valve began to close, the edge of the disk became caught on the ridge preventing the spring assisted disk from fully closing. The valve was disassembled and cleaned. The corrosion build up was removed and the inner surfaces smoothed. The disk was checked for freedom of movement and the valve was re-assembled. The PMT LLRT was performed satisfactorily.

The four vacuum breaker check valves were disassembled and examined. Problems with two of the valves were discovered. Valve 49-2018 exhibited a problem previously identified in a 10CFR21 notification. In the 10CFR21 Report, the manufacturer of the check valves identified the possibility of the valve sticking due to the hanger and hanger block being cast rather than machined. In these valves, the valve disk fits in the hanger which rotates on the hanger block. Because the parts were cast, their surfaces were rough and the potential for binding existed. Although this problem was only found in valve 49-2018, the applicable parts were replaced in all four vacuum breaker check valves. The other problem discovered was in valve 49-2017. Here, the problem was similar to that of valve 49-2018 but was due to a factory assembly problem rather than a manufacturing problem. Following parts replacement and re-assembly, the vacuum breakers were tested in accordance with Surveillance Test (ST)

procedure ST-4-049-952-2 "RCIC Vacuum Breaker Test." There were no failures.

Corrective Actions Taken to Avoid Future Non-Compliance

The details of this event along with lessons learned have been presented to System Managers during System Manager training. This training stressed the need to ensure the proper balance between working on components requiring system outages and allowing degraded conditions to exist until a scheduled outage. This training was completed on December 21, 1992.

System Managers have had a clear expectation established regarding the importance of performing timely troubleshooting to get an accurate understanding of component conditions. This was accomplished in a System Manager training seminar. It included a discussion of the capabilities of the accoustical specialists of the Nuclear Maintenance Division in aiding in the non-intrusive troubleshooting of check valves. This action was completed on December 21, 1992.

The System Managers will be provided with all future 10CFR21 notices received related to Limerick components. This action was implemented on January 5, 1993. Additionally, all System Managers will be provided with a list of Limerick components known to be affected by 10CFR21 notices received prior to January 5, 1993. This action is expected to be completed by January 31, 1993. These actions will allow for enhanced awareness of potentially degraded components.

Date When Full Compliance was Achieved

Full compliance regarding corrective measures for valve 49-2F028 and 49-2018 was achieved on November 14, 1992 following completion of all valve repairs and the return to operability of the valves. Ongoing actions discussed in the previous section ensure full compliance with 10CFR Appendix B, Criteria XVI.