

**PHILADELPHIA ELECTRIC COMPANY**

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GRAHAM M. LEITCH  
 VICE PRESIDENT  
 LIMERICK GENERATING STATION

September 7, 1990  
 Docket No. 50-352  
 License No. NPF-39

U.S. Nuclear Regulatory Commission  
 Attn: Document Control Desk  
 Washington, DC 20545

SUBJECT: Limerick Generating Station, Unit 1  
 Reply to a Notice of Violation  
 NRC Inspection Report No. 50-352/90-17  
 and 50-353/90-16

Dear Sirs:

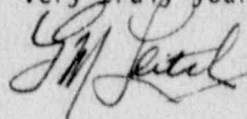
Attached is Philadelphia Electric Company's reply to a Notice of Violation for Limerick Generating Station (LGS) Unit 1, which was contained in NRC Inspection Report No. 50-352/90-17 and 50-353/90-16 for LGS, Units 1 and 2, dated August 3, 1990.

This Notice of Violation pertains to generically using expanded ranges for differential pressure or flow for safety-related pumps which extended beyond those specified in Table IWP-3100-2 of Section XI of the ASME Boiler and Pressure Vessel Code without appropriate technical justification. Attachment 1 to this letter provides a restatement of the violation followed by our response. The response includes the reason for the violation, the corrective steps which have been taken and the results achieved, the corrective steps which will be taken to avoid further violations, and the date when full compliance will be achieved. We received the inspection report on August 7, 1990, and are submitting this response within 31 days of receipt. This was discussed with Mr. T. Kenny of the NRC Region I on August 30, 1990 and on September 6, 1990.

Additionally, the inspection report noted continued problems with procedure compliance and technical adequacy and implementation of procedures. Also, a recurring problem concerning the approval of an inadequate technical justification prepared by the Nuclear Engineering Division (NED) was noted. We will provide our evaluation and plans for resolution of these weaknesses separately from this written response.

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

Very truly yours,



WGS/rgs

Attachment

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

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*Handwritten initials/signature*

Reply to a Notice of Violation

Restatement of the Violation

As a result of an inspection conducted on May 22 through July 1, 1990, and in accordance with NRC Enforcement Policy (10CFR2, Appendix C), the following violation was identified:

Technical Specification 4.0.5.a requires that inservice testing of ASME Code Class 1, 2 and 3 pumps shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR Part 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR Part 50, Section 50.55a(g)(6)(i). Section XI, Article IWP-3210 states that the allowable ranges of inservice test quantities in relation to the reference values are tabulated in Table IWP-3100-2. If these ranges cannot be met, the Owner shall specify in the record of tests the reduced range limits to allow the pump to fulfill its function, and those limits shall be used in lieu of the ranges given in Table IWP-3100-2.

Contrary to the above, since February 8, 1985, the licensee has been generically using expanded differential pressure ranges for safety related pumps which extend beyond those specified in Table IWP-3100-2 of Section XI of the ASME Boiler and Pressure Vessel Code without appropriate technical justification. In several cases the pump differential pressure ranges were expanded even though the actual pump data had not fallen outside of the Code range. In addition, the ranges were extended so broadly that the Inservice Testing Program was not assured of satisfactorily performing its intended function, to assess the operational readiness of safety related pumps.

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

Response

Admission of Alleged Violation

Philadelphia Electric Company (PECo) acknowledges the violation.

Reason For The Violation:

This violation is the result of generically using expanded ranges for differential pressure or flow in the LGS Inservice Testing (IST) program even though the allowable ranges specified in ASME Boiler and Pressure Vessel Code Section XI Subsection IWP Table IWP-3100-2 could be met.

In 1985, PECo's interpretation of the ASME Section XI Subsection IWP-3210 allowed for expanding pump performance acceptance criteria ranges (i.e. differential pressure or flow ranges) for pumps that could not meet the allowable ranges specified in Table IWP-3100-2. Expanded ranges were developed because 1) not all of the pumps tested under the IST program were expected to fall within the IWP Table 3100-2 range requirements (based on limited startup test data that showed pumps known to be operating within the design basis requirements had test results in the "Alert" and "Action Required" ranges of

Table IWP-3100-2), and 2) the limited test data available was insufficient to establish representative pump performance reference values.

Our use of these expanded ranges continued because PECO did not implement an adequate mechanism that required the re-evaluation of pump reference values or the application of expanded ranges as additional pump data was obtained.

#### Corrective Actions Taken and Results Achieved:

On June 22, 1990, Plant Staff personnel completed a review of the most recent IST pump performance data for all pumps in the IST program. This data review verified that all of the safety-related pumps, including the Residual Heat Removal (RHR) pump noted in the inspection report, met the minimum operability design basis requirements. Additionally, test data indicated no signs of degraded pump performance.

We will no longer use expanded ranges as the acceptance criteria for IST pump performance tests unless there is a pump-specific technical justification.

#### Corrective Actions to Prevent Recurrence

To ensure continued compliance with ASME Section XI Subsection IWP code requirements, several corrective actions will be implemented. These corrective actions are as follows:

- o Use of a recently developed pump performance trending program to identify as-needed changes to the pump reference values. This trending program will also be used to determine the need for the application of expanded ranges.
- o For pumps that we determine to require expanded ranges, provide on a case-by-case basis, an expanded range and the appropriate analysis to justify the expanded range.
- o Convert the existing IST program administrative guideline to an administrative procedure. This procedure will strengthen the control and implementation of the IST program. Also, the procedure will provide clearer direction regarding control of pump reference values, the method by which test acceptance criteria ranges are expanded, and a feedback mechanism to confirm applicability of the selected reference values and ranges. This procedure is expected to be implemented by December 31, 1990.

Surveillance test procedures are currently being reviewed to determine if other changes are warranted to ensure that the test results produced are comparable for the purpose of pump performance trending. The Surveillance Test procedure review and necessary testing for trending is expected to be completed by September 30, 1991.

A detailed analysis of past pump performance test data was completed on July 30, 1990. This analysis consisted of compiling IST program test data for each pump and developing a graph by plotting the pump performance data as a function of

time. Evaluation of these graphs facilitated the development of the above described corrective actions. Also, these graphs provide a method to graphically trend pump performance. This information will be utilized to re-establish pump reference values and to determine the need for the application of expanded ranges.

The review and analysis of test results completed to date have revealed that the Core Spray system pumps and the Control Enclosure Chilled Water system pumps do not require expanded ranges. The appropriate IST surveillance test procedures have been revised to include the IWP code range requirements.

An explanation clarifying the intent of the ASME Section XI Subsection IWP-3210 with respect to the use of expanded ranges, will be added to the IST program document by December 31, 1990.

Date When Full Compliance Will Be Achieved

Full compliance was achieved on September 7, 1990. In the future, pump-specific technical justifications will be provided, whenever expanded ranges are used as the acceptance criteria for IST pump performance tests.