

November 8, 1995

Mr. W. MacFarland, Vice President
Limerick Generating Station
Philadelphia Electric Company
P. O. Box 2300 Mail Code SMB 1-1
Sanatoga, PA 19464-2300

SUBJECT: INSPECTION NOS. 50-352/95-12; 50-353/95-12

Mr. MacFarland:

This refers to your November 1, 1995 correspondence, in response to our October 6, 1995 letter.

Thank you for informing us of the corrective and preventive actions documented in your letter. These actions will be examined during a future inspection of your licensed program.

Your cooperation with us is appreciated.

Sincerely,

ORIGINAL SIGNED BY:

Walter J. Pasciak, Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos. 50-352; 50-353

Enclosure: Licensee letter

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Mr. W. MacFarland

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cc:

D. M. Smith, Senior Vice President - Nuclear
G. A. Hunger, Jr., Chairman, Nuclear Review Board and Director - Licensing
J. L. Kantner, Regulatory Engineer - Limerick Generating Station

cc w/cy of licensee letter:

Secretary, Nuclear Committee of the Board
Nuclear Safety Information Center (NSIC)
D. Screnci, PAO
PUBLIC
NRC Resident Inspector
Commonwealth of Pennsylvania

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Inspection Program Branch, NRR (IPAS)

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Mr. W. MacFarland

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PECO ENERGY

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10 CFR 2.201

November 1, 1995

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. 50-352/95-12 and
50-353/95-12

Attached is the PECO Energy Company reply to a Notice of Violation for Limerick Generating Station, Units 1 and 2, that was contained in your letter dated October 6, 1995. The violation concerned inoperable primary containment hydrogen recombiners due to inadequate design control and testing for an associated temperature recorder replacement modification. The attachment to this letter provides a restatement of the violation followed by our reply. Some of the information within the response was previously provided to the NRC by Licensee Event Report (LER) No. 1-95-007, dated October 2, 1995.

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

Very truly yours,

GHS

Attachment

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

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REPLY TO A NOTICE OF VIOLATION

Restatement of the Violation

During an NRC inspection conducted on July 19, through September 18, 1995, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (60 FR 34381; June 30 1995), the violation is listed below:

10 CFR Part 50, Appendix B, Criterion III, Design Control, requires in part, that measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies, are correctly translated into specifications, drawings, procedures, and instructions. The design control measures shall provide for verifying or checking the adequacy of design, such as, by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.

Technical Specification (TS) 3.6.6.1 states, two independent primary containment hydrogen recombiner systems shall be operable in operational conditions 1 and 2. With one primary containment hydrogen recombiner system inoperable, restore the inoperable system to operable status within 30 days or be in at least hot shutdown within the next 12 hours.

Contrary to the above, from July to September 1995, design controls for modification to three primary containment hydrogen recombiners did not assure that the appropriate design basis was correctly translated into specifications and instructions, nor provide for adequate verification and checking of the design, in that (1) recorder calibration sheets were incorrect and did not reflect the "as built" condition of the plant; (2) an Acceptance Test Plan was not developed in accordance with procedure MOD-C-5, Mod Process Acceptance Testing; and (3) post maintenance modification testing for the hydrogen recombiners did not identify the deficiencies in the logic outputs, contact configuration, and jumper installation in the temperature recorders, which led to the inability to operate three of the four hydrogen recombiners. As a result of this error, the 1A recombiner was inoperable from August 1, 1995 to September 2, 1995; the 1B recombiner was inoperable from August 8, 1995 to September 2, 1995; and the 2A recombiner was inoperable from July 19, 1995 to September 2, 1995, which were in excess of TS 3.6.6.1.

This is a Severity Level IV Violation (Supplement 1)

RESPONSE

Admission of the Violation

PECO Energy Company acknowledges the violation.

Reason for the Violation

The cause of the failure to correctly translate design basis information into installation instructions such as instrument calibration/configuration sheets was personnel error due to less than adequate attention to detail. Investigation into the inoperable hydrogen recombiner event revealed that the calibration sheets used to develop the configuration for the recombiner temperature recorders during a 1995 modification were incorrect from a previous modification to the recorders in 1989. This issue is considered to be a paperwork error only. The 1989 design basis information (i.e., the electrical drawings, etc.) was determined to be correct since there was no change to this information during the 1995 modification, and the information was used to resolve the 1995 inoperable recombiner issue. The 1989 calibration sheets were developed by an Instrumentation and Controls (I&C) Engineer in accordance with the appropriate procedural controls based on the design basis information associated with the modification. The modification process relies on the Post Modification Test (PMT) to identify any errors. However, in 1989, the temperature recorders were properly setup and calibrated as evidenced by the successful completion of the PMT following the modification. Also, the hydrogen recombiners have been operable with respect to the temperature recorders since 1989 as evidenced by a review of Surveillance Test (ST) history which indicated there were no ST failures due to the temperature recorders. With respect to the 1995 modification, an opportunity to detect this error was missed when the new recorders were configured.

The cause of the inadequate design verification was a combination of personnel errors. First, an Acceptance Test Plan (ATP) was not prepared by the Lead Station Representative (LSR), typically a System Manager, in accordance with the requirements of procedure MOD-C-5, "Mod Process Acceptance Testing," in advance of the completion of the modification installation. The ATP identifies the acceptance criteria and the procedures required to perform the acceptance testing of the modification after the installation phase. The LSR coordinates the station initiated activities for the modification and is responsible for developing the ATP. Procedure MOD-C-5 specifies that the ATP should use, whenever possible, existing procedures such as PMTs. In this particular case, the LSR deemed the standard PMT for recorders to be adequate since the modification was considered to involve simple recorder replacements. No specific PMT requirements were communicated to the Maintenance planner.

In addition, the Maintenance planner who planned the 1995 modification work orders and the PMT did not involve the specific System Manager who is responsible for the hydrogen recombiner system. During the development of the PMT, the planner did not realize that the modification had the potential to adversely impact the logic function of the temperature recorders for the hydrogen recombiners. As a result, the PMT only verified the indication function and missed the errors associated with calibration and installation of the recorders. Had the PMT specified performing an existing ST procedure to verify operability, the errors would have been identified. The errors of both the LSR and the Maintenance planner were the result of a lack of familiarity with the modification process procedures due to inadequate training.

Corrective Actions Taken and Results Achieved

As a result of a similar Peach Bottom Atomic Power Station event and an Engineering Self Assessment, the various common procedures which address the overall modification process were streamlined and enhanced. These procedural changes were under development at the time of this event. These enhancements have been reviewed and were determined adequate to address the ATP and PMT issues.

A review was performed of Engineering Projects (2273 total, including archived data) and Engineering Change Requests (ECRs) back to 1993, and no similar issues were identified. All modification and ECR implementation was placed on hold as soon as the cause of the event was identified, and is being released only through the Senior Manager-Design Engineering until the enhanced modification process/procedures stated above are determined to be fully understood and implemented by appropriate station personnel.

All Hands meetings have been conducted by the Senior Manager-Design Engineering with personnel from Maintenance Planning, Design Engineering, Plant Engineering, and Operations. These meetings were conducted to ensure personnel understand the 'lessons learned' from this event, and are aware of the modification process enhancements stated above.

Corrective Actions to Avoid Future Noncompliance

The process, procedures and expectations for transferring design basis information into installation data sheets will be evaluated and revised as necessary, and any changes will be communicated to the affected station organizations/personnel by March 1, 1996.

The System Manager Qualification Card will be revised by December 31, 1995, to include LSR responsibilities and demonstrated skills. In addition, all System Managers will be trained and knowledgeable in the use of the appropriate modification process procedures, including MOD-C-5 by March 1, 1996.

A training needs analysis will be performed by December 15, 1995, for Maintenance personnel on the modification/ECR process, including the PMT process. Training lesson plans and materials will be developed by February 1, 1996, and training will be conducted as appropriate.

Date When Full Compliance was Achieved

Full compliance was achieved by 2055 hours on September 2, 1995, when the appropriate repairs and testing of all three hydrogen recombiners were satisfactorily completed, and following a management review of the immediate corrective actions and testing methods, the recombiners were declared operable.