U.S. NUCLEAR REGULATORY COMMISSION REGION I

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Licensee:	Philadelphia Electric Company Correspondence Control Desk P.O. Box 195 Wayne, Pa 19087-0195
Facility Name:	Limerick Generating Station, Units 1 and 2
Inspection Period:	February 10 - March 23, 1991
Inspectors:	T. J. Kenny, Senior Resident Inspector L. L. Scholl, Pesident Inspector M. G. Evans, Resident Inspector
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Approved by:

Lawrence T. Doerflein, Chief Reactor Projects Section 2B Division of Reactor Projects

Date 91

Inspection Summary: This inspection report documents routine and reactive inspections during day and backshift hours of station activities including: plant operations, radiation protection, surveil ance and maintenance, emergency preparedness, security, engineering and technical support, and safety assessment/quality verification.

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EXECUTIVE SUMMARY Limerick Generating Station Report Nos. 91-05 & 91-06

Plant Operations

There was only one reportable event for both operating units during this report period (Section 1.2). A brief operational chronology is provided in Section 1.1. Section 7 describes the closure of the only remaining pre-operational test required on Unit 2, load rejection by Main Turbine Trip. The test was successfully completed on March 22, 1991. Engineering determination will address the vibration results obtained during the test. Also, Section 7 describes the closure of an unresolved item concerning loss of shutdown cooling during testing. PECo actions regarding this concern have been evaluated and the item closed.

Surveillance and Maintenance

The periodic overhaul of a main control room chiller was well controlled utilizing cretailed procedures.

Safety Assessment and Quality Verification

Section 5.1 documents the assessment of a well ordered Audit Program. The results of the audit are utilized by corporate and mid-level managers to perform self assessments and corrections to their respective departments. Section 5.2 describes the poorly administered implementation of Technical Specification required administrative controls for the review process of procedures and programatic changes, which resulted in the issuance of a Notice of Violation. Section 10 describes the closure of items of concern and a violation regarding the Document Control and Records Ketention Program.

1.0 PLANT OPERATIONS (71707)

The inspectors conducted routine entries into the protected areas of the plant, including the control room, reactor enclosure, fuel floor, and drywell (when access is possible). During the inspectious discussions were held with operators, health physics (HP) technicians, instrumer: and control (I&C) technicians, mechanics, security personnel, supervisors and plant management. The inspections were conducted in accordance with NRC Inspection Procedure 71707, and affirmed PECo's compliance with 10 CFR, Technical Specifications, License Conditions and Administrative Procedures. During this period, 18 hours of deep backshift inspections were conducted.

1.1 Operational Overview

At the start of this report period both units were operating at 100% power.

Unit 1

March 8	Power was reduced to approximately 80% to perform main turbine valve
	testing. Reduced power operation continued following the completion of the
	testing due to higher than normal reactor coolant conductivity.

- March 14 Power was returned to 100% after reactor coolant conductivity was improved by replacing the condensate filter demineralizer resins. PECo determined that two lots of the powder resins with higher than normal sodium content were the cause of the high conductivity. PECo has suspended the use of resins from this vendor until the root cause of the problem has been determined and adequately resolved.
- March 14 Power was reduced to 90% when a channel 'B' main steam line high radiation alarm was received. Followup troubleshooting determined that the instrument calibration had drifted and was subsequently recalibration. PECo is in the process of replacing the existing monitors, which utilize vacuum tubes, with a fully solid state monitor. 'The new models have been in use in Unit 2 and have not been susceptible to the same drifting problems.

Unit 2

February 13 Power was reduced to 95% due to the hydrogen concentration in the offgas system increasing to approximately 3%. This action was taken even though operation may continue with hydrogen as high as 4%. The hydrogen concentration had gradually increased over the operating cycle. Discussions with PECo is dicate that the catalytic recombiner (hydrogen removal equipment) may have been coated with a foreign substance which would inhibit the proper operation of the unit.

- February 14 Power was returned to 100% when the offgas hydrogen levels were decreased by introducing additional air upstream of the offgas system hydrogen recombiner. Additional investigation into the apparent reduction in the offgas recombiner efficiency will be performed a tring the current refueling outage which comme ed on March 22, 1991.
- February 20 Power was reduced to 15% and the main turbine was removed from service to permit the replacement of the number 2 servic control valve. The valve had developed an electrohydraulic control (EHC) oil leak.
- February 22 Power was returned to 100% following the replacement of the servo control valve.
- March 10 Power coastdown commenced when core flow was maximized. All control lods had been withdrawn to the full out position on March 8.
- March 14 Power was reduced to 15% and the main turbine was removed from service due to the loss of the isophase bus duct cooling fans. One fan had been taken out of service for maintenance. The blocking in place for this work, which included racking out the circuit breaker, inadvertently prevented the operation of the backup fan. The interconnection of the fan control circuits through auxiliary breaker contacts was overlooked by the operators when preparing the blocking. The oversight was partly due to the fact that the circuit was not a typical Bechtel design but was a design unique to the cooling system vendor. PECo is investigating.
- March 15 Power was returned to 100% following an inspection of the isophase buses and the restoration of the cooling system.
- March 22 The plant was shut down to commence the first refueling outage. The shutdown was in accordance with special test SP-T-007, Unit 2 Main Turbine Trip Trot. Refer to Section 7 for test performance details.

1.2 Reportable Events

Unit 1

On February 18, 1991, it was discovered that a Group VI A high radiation isolation signal was present. Further investigation determined that the isolation signal was generated on February 17, 1991, during the time when a shift technical advisor (STA) was accessing the wide range accident radiation monitor (WRAM) data memory. The valves that are affected by this isolation signal were already closed prior to the isolation signal.

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The isolation signal was generated when the STA selected a channel item number in the WRAM microprocessor which is not identified in the operating procedure. When the microprocessor could not locate the requested data an error message was generated. The error message then resulted in a system reset signal which caused the momentary isolation signal to be generated.

The STA was counseled on the importance as corrating systems within the bounds of the operating procedure. In addition, the included is included in the operations department requalification training program and the proc dure was revised to caution the operators that an error signal may cause a system isolation.

Unit 2

There were no reportable events on Urit 2 during this inspection period.

The above event was reported to the NRC via the Emergency Notification System (ENS) and the root cause analysis and corrective actions will be reviewed further upon issuance of the Licensee Event Reports as part of the routine inspection program.

1.3 Engineered Safety Feature (ESF) System Walkdown

The inspectors verified the operability of the Unit 2 High Pressure Coolant Injection (HPCI) System by performing a walkdown of the system to confirm that system lineup procedures agree with plant drawings and the as-built configuration. This system walkdown was also conducted to identify equipment conditions that might degrade system performance, to determine that instrumentation is calibrated and functioning, and to verify that valves are properly positioned and locked as appropriate. The inspectors also utilized methods prescribed in a study prepared for the NRC by Brookhaven National Laboratory using the Limerick Probabilistic Risk Assessment (PRA), to enhance the inspection activity. The study, entitled PRA-Based System Inspection Plan, dated May 1986, provides inspection guidance by prioritizing plant safety systems with respect to their importance to risk. Abbreviated system checklists in Table 3.3, which identify components that are considered to have a high contribution to risk as determined in the PRA, were also used by the inspector.

The following procedules and drawings were utilized during the performance of the inspection:

Draving M-55	High Pressure Coolant Injection Piping and Instrumentation Drawing
Drawing M-56	HPCI Pump/Turbine Piping and Instrumentation Drawing

2S55.1.A(COL) Equipment Alignment for Automatic Operation of HPCI System

S55.1.A Normal HPCI Lineup for Automatic Operation

The inspector found the system to be in good condition and properly aligned.

2.0 SURVEILLANCE/SPECIAL TEST OBSERVATIONS (61726)

During this inspection period, the inspector reviewed in-progress surveillance testing, as well as completed surveillance packages. The inspector verified that surveillances were performed in accornace with licensee approved procedures, plant Technical Specifications, and NRC regulatory requirements. The inspector also verified that instruments used were within calibration tolerances and that qualified technicians performed the surveillances.

Surveillance/special testing observed and/or reviewed included:

ST-6-049-230-1	RCIC Pump, Valve and Flow Test
SP-099	Unit 2 Main Steam Piping Dynamic Loading during Turbine Stop Valve
	and Control Value Closures
SD-T-007	Unit 2 Main Turbine Trip

During the performance of ST-6-049-230-1, the developed pump flow was sufficiently higher than the reference value, such that it was in the required action range as defined by Section XI of the ASME Boiler and Pressure Vessel Code. Based on this result, the pump was declared inoperable. The test was reperformed with similar results.

An engineering evaluation of the data was performed, concluding that the pump was operable. The inspector reviewed the evaluation and agreed with the engineering conclusion. The procedure used to perform the engineering evaluation is being revised due to previousproblems which have been experienced in obtaining repeatable test results. The effectiveness of these improvements will be assessed as part of the routine inspection program.

No problems or concerns were noted by the inspectors. Conduct of special tests SP-099 and SP-T-007 are discussed in Section 7.0 of this report.

3.0 MAINTENANCE OBSERVATIONS (62703)

The inspector reviewed the following safety related maintenance activities to verify that repairs were made in accordance with approved procedures and in compliance with NRC regulations and recognized codes and standards. The inspector also verified that the replacement parts and quality control utilized on the repairs were in compliance with the liceusee's QA program.

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Maintenance activities observed and/or reviewed included:

MRF 9086181	"B" Main Control Room Chiller Overhaul
MRF 9004516	Clean "B" Main Control Room Chiller Condenser
MRF 8904387	Repair Leak on "B" Main Control Room Chiller Motor Terminal
M-090-004	Disassemble, Clean and Inspect Control Room Chillers OA-K112 and OP-K112
M-090-005	Reassembly of Control Room Chiller

No problems or concerns were noted by the inspectors.

4.0 RADIOLOGICAL PROTECTION (71707)

During the report period, the inspector monitored work in progress in both units; included were health physics procedures and controls, ALARA implementation, dosimetry and badging, protective clothing use, adherence to Radiation Work Permit requirements, radiation surveys, radiation protection instrument use, and handling of potentially contaminated equipment and materials.

The inspector observed individuals frisking in accordance with HP procedures. A sampling of high radiation area doors was verified to be locked, as required. Compliance with RWP requirements was reviewed during plant tours. RWP line entries were reviewed to verify that personnel had provided the required information and that people working in RWP areas were observed to be meeting the applicable requirements. No unacceptable conditions were identified.

5.0 SAFETY ASSESSMENT/QUALITY VERIFICATION

5.1 PECo Audit Program (40702, 40704)

Audits are required, by Technical Specifications, to be performed on a predetermined timely basis within the safety related areas of management and plant operations, including offsite support. Audits may also be performed, at the request of senior management, in areas where more information is required for additional assessment for safe facility operation. The resident inspector reviewed documentation (listed in Attachment A), conducted interviews and accompanied auditors during the performance of an audit, in order to ascertain the effectiveness of the Limerick Audit Program. As a result of the inspection the following results were obtained:

- An adequate and effective audit program exists at Limerick Generating Station.
- Qualified personnel are being utilized to perform the audits.
- The audits meet or exceed the requirements of the Technical Specifications.

- Auditors are independent of Limerick operations and objective in their audit performance and findings.
- Identified problem areas are directed to the appropriate level of management attention, and closed in an effective manner meeting all the requirements of the prescribed ANSI standard.
- Re-audits are being performed as required when QA management determines the need.
- Adequate schedules and preplanning are in place that are delineated within a continuously updated four year plan.
- Audit reports receive a wide distribution within all levels of management including corporate executive management.
- Specialists are acquired as needed to assist in performance of special audits.
- Procedures and checklists, utilized by audit personnel, are well thought out and of sufficient detail to perform a thorough audit. Additional documents from all aspects of the nuclear industry are utilized to aid in the checklist preparation.

The following strengths were noted by the inspector:

- The auditors utilize a very comprehensive checklist which is developed from the Master Audit Plan (MAP). After each audit the MAP is updated to incorporate the latest documented problem areas identified. Additionally, NRC and industry feedback documents (bulletins, generic letters and owners group), are stored in the audit file by subject, and are utilized in the MAP update. The inspector found the checklists to be very broad in scope and refined to a narrower focus on the individual issues within the general scope. The results obtained compile a very objective inspection of the subject being audited.
 - PECo hires a variety of experts to aid in the specialized inspections (such as inservice inspection, Section XI of the ASME). A review of the experts credentials show that PECo hires a highly qualified type of individual. These experts have aided PECo in performing indepth audits in technical areas.
 - Although PECo auditors i dentify problem areas, only a small open items list exists. The inspector examined the current open items list, totaling 45 items, of which only one item was greater than 30 days old
- Pre-audit planning conferences are conducted, which add another dimension to the preparation of the checklist. The attendees to this conference are from the plant staff and are encouraged to surface potential problem areas for the auditor to examine in

more depth. The conference also serves to inform the staff of what is being audited and how the process is being performed.

The following weakness was noted by the inspector:

The method of printing the Corrective Action Requests (CARs) is by the PIMs computer. The form that the computer uses is very busy with lines and extraneous numbers, thus the reader is easily distracted away from the problem being presented. Discussions with several PECo managers indicate the form is difficult to access and use. The inspector found it difficult to focus on the subject due to: (1) the unnecessary underlining of each line of print, (2) all of words in capital letters, and (3) the date prominently affixed at the end of each line of print. The correct information is present, however.

Additional Observations

There was ample evidence of corporate and site management monitoring and providing input to the Limerick audit program.

There is an established Audit Review Group, which consists of superintendents, managers and general managers from Limerick, Peach Bottom and Corporate, that meet on a monthly basis to assess how to improve the quality of audits, communications among audit sections, development of audit personnel, and methods to disseminate audit concerns.

PECo is a member of the Joint Utilities Management Association (JUMA), which is comprised of 13 utilities and meets yearly. PECo participates in JUMAs overview of Quality Assurance programs at other JUMA participating sites on a regular basis. This exchange program allows PECo auditors to observe, through outside audits, other methods of performing QA/QC functions for nuclear power plants which may be applied to Limerick.

The inspector did not identify any violations during the course of this inspection.

5.2 Station Qualified Reviewer Program

Background

The Technical Specifications (TS) for Limerick Generating Station, Units 1 and 2 were recently amended to reflect the implementation of a Station Qualified Reviewer (SQR) Program for review and approval of new station programs, procedures, and changes thereto. The major changes resulting from this TS amendment are (1) that the Plant Operations Review Committee (PORC) is no longer required to render a determination as to whether or not a new program, procedure, or change thereto constitutes an unreviewed safety question (USQ) in accordance with 10 CRF 50.59 and (2) that PORC will no longer be required to review and recommend approval/disapproval of new programs or program changes and

certain types of procedures or procedure change to the Plant Manager. The responsibility and authority to perform these functions has been transferred to the responsible Superintendents designated by the Plant Manager. However, PORC continues to be responsible for review and recommendation for approval/disapproval of Administrative Procedures, and any new program, procedures, or change thereto that requires an unreviewed safety question determination (10 CFR 50.59 safety evaluation) be performed. These changes to the TS were effective as of January 2, 1991.

Findings

The inspector reviewed the documents listed in Attachment B to determine if adequate controls were in place to support implementation of the SQR Program. In addition, on March 15, 1991, the inspector reviewed approximately 21 recently approved procedure changes to determine if the SQR Program was being correctly implemented. The inspector's findings are discussed below.

- Administrative Procedure, A-4.2, Section 4.2 states that the SQR cannot both be the SQR and the responsible superintendent when reviewing and approving a particular procedure. However, the inspector identified that changes to procedures ARC-MCR-223, "Annunciator Response Card (ARC) for Main Control Room (MCR) Panel 223," and ARC-MCR-212, "ARC for MCR Panel 212," were approved by an individual who was acting for the responsible superintendent, and had previously approved the procedure as the SQR. This is a violation for failure to follow Administrative Procedure A-4.2 (50-352/91-05-01).
- Technical Specification 6.5.3.1 requires that the SQR render a determination in writing of whether or not a cross-disciplinary review of procedure changes is necessary. However, the inspector noted that changes were made to procedures ARC-MCR-212, "ARC for MCR Panel 212," ARC-MCR-219, "ARC for MCR Panel 212," ARC-MCR-219, "ARC for MCR Panel 219," ARC-MCR-223, "ARC for MCR Panel 2DC861" and S32.8.A, "Placing Unit 1 Main Transformers in Service". These procedures were subsequently approved by the responsible superintendent without the SQR rendering this determination in writing. This is a violation of TS 6.5.3.1 (50-352/91-05-01).
 - Per TS 6.5.1.6a and 6.5.1.7a procedure changes which require a 10 CFR 50.59 safety evaluation are required to be reviewed by PORC prior to implementation. The inspector noted that changes to procedure ARC-MCR-227, "ARC for MCR Panel 227," and the associated 10 CFR 50.59 safety evaluation were reviewed by a PORC subcommittee and approved by the responsible superintendent, and then implemented without being forwarded to PORC for review. A PORC subcommittee does not meet the PORC quorum requirements of the Technical Specifications. This is a violation of TS 6.5.1.6a and 6.5.1.7a (50-352/91-05-01).

In addition, the inspector reviewed Administrative Procedure A-4, "Plant Operations Review Committee Procedure". Section 7.4.4 details the PORC Subcommittee Review method. The inspector noted that the procedure is inadequate in that it allows for implementation of procedure changes which require a 10 CFR 50.59 safety evaluation, following PORC subcommittee review and approval by the Plant Manager, without first being reviewed by PORC. Through discussions with PECo representatives, it appears to the inspector that the practice of implementing procedure changes prior to PORC review has been longstanding at Limerick.

On January 5, 1991, revision 9 of PORC Position 33 was issued which included a definition of "responsible superintendent" for TS 6.5.3.2. This definition appears to contradict the intent of the TS as detailed in PECo's TS Change Request submittal, dated July 13, 1990 and the Office of Nuclear Reactor Regulation (NRR) Safety Evaluation (SE), dated October 4, 1990, supporting TS Amendments Nos 47 and 10, for Units 1 and 2, respectively. The NRR SE states that the plant Superintendents (Operations, Technical, Maintenance/I&C and Services) are responsible to approve procedures, programs and changes thereto which do not require safety evaluations. In addition, PECo's change request submittal states that the responsible Superintendents are also PORC members. Instead, the PORC Position assigns the responsibility to various other personnel including the Security Superintendent, the Project Manager, and the Administration Superintendent, who are not PORC members, and the Regulatory Engineer who is a PORC member.

Also, PORC Position 33 was incorrect in that it gave personnel other than the Plant Manager authority to approve Security Plan Implementing Procedures and Emergency Plan Implementing Procedures which contradicts TS 6.5.3.2. However, procedure A-4.2, "Station Qualified Reviewer Process" states in step 5.4 that the Plant Manager is responsible for approval of these procedures. No examples of procedures approved by other than the four plant Superintendents or the Plant Manager were noted by the inspector.

A-4.2, sections 7.2.3 and 7.2.3.1 state that the SQR shall review the 10 CFR 50.59 review and sign the 50.59 Determination/SE as the independent reviewer. However, the inspector identified four 50.59 determinations and one 50.59 determination and SE where this did not occur. In addition, the inspector identified one 50.59 Determination for which no one signed as the independent reviewer.

There is no written guidance regarding when the cross-disciplinary review required in TS 6.5.3.1 is necessary. Currently, it is the judgment of the individual SQRs.

The inspector discussed the above issues with PECo representatives who promptly conducted a survey of 284 procedures processed, utilizing SQR review, between January 18 and March 15, 1991. One hundred and thirteen procedures were found to be processed or approved incorrectly. PECo's immediate corrective actions included:

- On March 20, 1991, the Regulatory Engineer issued a memorandum for the Superintendents and the SQRs to notify them of the inspector's finding: and the survey results and remind them of their responsibilities in performing the SQP review process and procedure approval.
- As of March 21, 1991, only the four plant superintendents can act as the responsible superintendents when approving procedures per TS 6.5.3.2.
- As of March 25, 1991, the PORC subcommittee method of review has been discontinued.

Other actions committed to by PECo management include:

- Additional SQR training will be conducted.
- Review of procedures processed prior to January 18, 1991 which utilized SQR review, will be performed.
- Written guidance will be developed to specify when cross-disciplinary review is required.

The resident inspector had no further questions at the close of this report period. The inspector will review PECo's response to the NOV when received.

6.0 REVIEW OF LICENSEE EVENT, ROUTINE AND SPECIAL REPORTS (90712, 92700)

The following LERs, Routine and Special Reports were reviewed by the inspector and determined to have accurately described the events and to have been properly addressed for corrective or compensatory action.

6.1 Unit 1

LER-1-91-004, Event Date: January 23, 1991, Report Date: February 22, 1991

Inadequate Instrumentation Surveillance Test Procedures

This LER reports a condition prohibited by TS in that certain surveillance requirements had not been satisfied for TS Section 3.3.7.5, "Accident Monitoring Instrumentation" and the associated TS Actions were not taken in the specified time period. This condition has existed since initial plant operations for both units. The specific accident monitoring instrumentation is the Reactor Protection Vessel (RPV) water level and neutron flux monitoring instrumentation. RPV water level indication for post-accident monitoring consists of two overlapping ranges, each comprised of level recording and indication instrumentation. These are the Wide Range and Fuel Zone instrumentation. However, due to a misinterpretation of the TS requirements, only testing of the wide range instrumentation was included in the surveillance test procedure.

Additional licensee evaluation revealed a similar situation with the neutron flux monitoring instrumentation. Although the Source Range Monitors (SRM) and Intermediate Range Monitors (IRM) are not used to monitor neutron flux during normal plant operation, they are required to be operable by 1S Section 3.3.7.5 in OPCONs 1 and 2, to provide neutron flux indication during an Anticipated Transient Without Scram (ATWS) event. However, the IRMs and SRMs had not been considered to be required to be operable in OPCON 1, since normal power operation exceeds their ranges.

The results of the above misinterpretations led to inadequate procedures which did not require monthly channel checks of the SRMs and IRMs in OPCON 1 or the 18 month channel calibration and monthly channel checks for the fuel zone RFV water level indication instrumentation in OPCONS 1 and 2. Corrective actions included prompt completion of the required testing and revisions to the appropriate procedures to assure future conduct of the required surveillance tests. The inspector had no further questions.

LER 1-91-005, Esent Date: January 30, 1991, Report Date: February 27, 1991

Spurvious ESF Actuation During Surveillance Test

This LER reported an Engineered Safety Feature actuation resulting from a spurious Division 1 High Drywell Pressure (HDP) signal. This event was discussed in combined inspection report 50-352/91-02 and 50-353/91-02. The inspector reviewed the LER and noted that it accurately depicts what was discussed in the above mentioned inspection report. PECo's long term corrective action is to close the equalizing valves for the pressure differential switches and remove their respective valve handles. PECo has committed to complete this action by April 1, 1991. The inspector had no additional guestions.

LER 1-9 -006, Event Date: February 18, 1991, Report Date: March 18, 1991

Inadvertent Group VI Isolation Signal

This report was submitted in response to the event which resulted in a system isolation signal as discussed in Section 1.2 of this inspection report. The inspector had no additional guestions upon review of this LER.

6.2 Routine Reports

The following reports were reviewed:

Monthly Operating Report for January 1991, dated February 11, 1991

Limerick Generating Station, Units 1 and 2 1990 Annual Report of all Challenges to Safety/Relief Valves, Unit 1 - Report No. 6 and Unit 2 - Report No. 2 dated February 2, 1991

No concerns were identified upon review of the above listed reports.

7.0 FOLLOWUP OF PREVIOUS INSPECTION FINDINGS (92702)

(Closed) Unresolved Item (50-353/39-31-01), Conduct of the Main Turbine Trip Test prior to the first Unit 2 refueling outage; this was the only pre-operational test required on Unit 2.

On March 22, 1991, a main turbine trip test from approximately 96% power was performed on Unit 2 prior to the start of the first refueling outage. The inspectors reviewed special procedures (SP) SP-T-007, "Unit 2 Main Turbine Trip," Revision 1 and SP-099, "Unit 2 Main Steam Piping Dynamic Loading during Main Turbine Stop Valve and Control Valve Closures," Revision 1 and witnessed conduct of the test from the main control room. Feedwater response to the main turbine trip was excellent. Minimum and maximum water level was -5.12 and +43.09 inches, well within the acceptance criteria limits of -38 and +54 inches. The results of the main steam piping vibration te⁻⁺ (SP-099) were acceptable with the exception of three load sensing clevis pins whose loads ex_seeded the acceptance limits. Engineering Work Request (EWR) A-0032991 was written to request engineering evaluation of these results and determine if additional action is required. Based upon successful completion of the main turbine trip test this unresolved item is closed.

(Closed) Violation (50-352/90-13-01), Failure to control documents affecting quality.

During an inspection of the Document Control and Records Retention Programs for Limerick, the inspector found that the Construction Building controlled procedures were not maintained per administrative procedures in that there were obsolete procedure revisions, missing and misfiled procedures, and a missing volume of procedures. Immediate PECo corrective actions included 100% auditing of several controlled document locations at Limerick. Discrepancies similar to those noted by the inspector were identified and corrected. Subsequent corrective actions included identification and 100% auditing of all controlled documents at Limerick and initiation of a monthly audit program.

PECo performed an extensive root cause assessment and determined that the document control discrepancies were the result of insufficient management oversight and inadequate administrative controls. On May 21, 1990, a new Document Administration Center (DAC)

supervisor was appointed to assume the DAC responsibilities. In addition, Administrative Procedures governing Document Control and Record Retention activities were revised.

The inspector discussed the current status of the Document Control Program with applicable PECo management personnel and reviewed the revised procedures. The inspector determined that PECo has taken appropriate corrective actions to ensure documents are adequately controlled at Limerick. This violation is closed.

(Closed) Unresolved Item (50-352/90-17-02), Loss of Shutdown Cooling during Testing.

The inspector reviewed the PECo root cause analysis of the loss of shutdown cooling event which occurred on June 7, 1990 during the performance of an instrumentation surveillance test. During the test the residual heat removal service water (RHRSW) isolation valves (to the RHR heat exchanger) are verified to close upon receipt of a high radiation signal. The test was performed on the RHR loop which was operating in the shutdown cooling mode and the isolation valves were not reopened following the test. PECo identified the following causes for this event:

- The test procedure did not clearly identify the consequences of performing the test.
- Communications between the technicians performing the test and the Control Room were less than adequate.
- The planning of the test was less than adequate.

The following corrective actions have been implemented to prevent recurrence:

- The surveillance test has been revised to include a verification that the loop under test is not in service for shutdown cooling and also to clearly state that the isolation valves go closed as a result of the test.
- Additional training was conducted to stress proper communication techniques.
- Work planning practices are to be reviewed to ensure the effects of changing plant conditions on the planned work are considered.

Based on these actions, this item is closed.

8.0 MANAGEMENT MEETINGS

8.1 Exit Interviews

The NRC resident inspectors discussed the issues in this report with the licensee throughout the inspection period, and summarized the findings at an exit meeting held with the the Plant Manager, Mr. J. Doering, on March 21, 1991. No written inspection material was provided to licensee representatives during the inspection period.

8.2 Additional NRC Inspections this Period

The following inspector exit interviews were attended during the report period:

Date	Subject	Report	Inspector
March 1, 1991	Emergency Operating Procedure Followup	90-04/90-05	S. Pullani

ATTACHMENT A PECO AUDIT PRGCRAM

Documents Reviewed

Regulatory Guide 1.146, August 1980. Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants.

ANSI N45.2.23, 1978. Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants.

ANSI N18.7, 1976. Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants.

ANSI N45.2.12, 1977. Requirements for Auditing Quality Assurance Programs for Nuclear Power Plants.

Technical Specifications, Section 6, "Audits".

FSAR 17.2 18, Audits

NQA-8, Revision 1, Auditor Qualification

NQA-21. Revision 1, NO* Audits

NQA-25, Revision 3, Corrective Action

Limerick Generating Station Four Year Audit Schedule Forecast

10 CFR 50, Appendix B

Regulatory Guide 4.15, December 1977. Quality Assurance for Radiological Monitoring Programs (Normal Operations) Effluent Streams and the Environment, Section 9, Audit Portions.

Audits:

A0001426	Inservice Inspection
A0000075	Penetration Seals
A000068	Limerick Maintenance Program/Electrical
A0006180	Controls for Returning Equipment to Service Post-Modification
A0005800	ILRT/ILRT Activities (in process of being performed)

ATTACHMENT B SQR PROGRAM

Documents Reviewed

Administrative Procedure A-4, "Plant Operations Review Committee (PORC) Procedure," Revision 10, approved January 3, 1991.

A-4.2, "Station Qualified Reviewer Process," approved January 3, 1991.

PORC Position 33, Revision 9, approved January 5, 1991.

Limerick Generating Station, Units 1 and 2, Technical Specifications Change Request, dated July 13, 1990.

Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment Nos. 47 and 10 to Facility Operating License Nos. NPF-⁹9 and NPF-85, Philadelphia Electric Company, Limerick Generating Station, Units 1 and 2, Docket Nos. 50-352 and 50-353, dated October 4, 1990.

Nuclear Training Section Lesson Plan, Winter Continuing Training, Technical Staff and Management, dated February 4, 1991.

Training Handout, "Approval Process for Plant Procedures and Programs."