U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos.	90-25 90-24
Docket Nos.	50-352 50-353
License Nos.	NPF-39 NPF-85
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:	October 16 - November 17, 1990
Inspectors:	T. J. Kenny, Senior Resident Inspector L. L. Scholl, Resident Inspector M. G. Evans, Resident Inspector B. S. Norris, Project Inspector

Approved by: for Lawrence T. Doerflein, Chief — 21 Dec 90 Date
Reactor Projects Section 2B

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

TABLE OF CONTENTS

EXECUTIVE SUMMARY
Limerick Generating Station
Report No. 90-25 & 90-24

Plant Operations

A reportable event on each unit involving a procedure problem and an equipment malfunction are discussed in Section 1.

Surveillance and Maintenance

A non cited violation was identified concerning a failure to follow the housekeeping procedure in an area where loose materials could have fallen into the open reactor vessel.

Engineering and Technical Support

Design modifications, installed this outage on Unit 1, are discussed in detail in Section 4. The inspectors concluded that the design packages, installation, and training were very well implemented.

Radiological Protection

The contamination of a group of individuals is discussed in Section 5. The workers were contaminated when airborne activity entered the clean area they were working in, during the draining of the reactor cavity.

Safety Assessment and Quality Verification

The qualifications of the newly named plant manager and maintenance manager were reviewed. They were found to be qualified in accordance with ANSI/ANS 3.1-1978 for their positions (Section 8).

DETAILS

1.0 PLANT OPERATIONS

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 inspections, discussions were held with operators, health physics (HP) and instrument 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 commitments and compliance with 10 CFR, Technical Specifications, License Conditions and Administrative Procedures. During this period, 34 hours of backshift inspections were conducted, of which 4 hours were deep backshift.

1.1 Operational Overview

During this report period, Unit 1 remained shutdown for its third refueling outage which began on September 7. Unit 2 maintained approximately 100% power throughout the period.

1.2 Reportable Events

1.2.1 Unit 1

On November 10, Unit 1 experienced various inadvertent system actuations including an emergency diesel generation (EDG) start and an emergency core cooling system injection to the reactor vessel. Shutdown cooling was also lost when the operating residual heat removal service water pump tripped as part of the EDG auto start/bus load shedding sequence. The actuations occurred when drywell pressure instruments sensed a momentary pressure surge during the restoration of instrumentation following the performance of ST-2-036-680-1, "Drywell Pressure Transmitter Sensing Line Blowback Procedure," whose purpose is to ensure the sensing lines are unobstructed. In accordance with the procedure, the drywell pressure instruments were satisfactorily returned to service first. During the restoration of Instrument Gas/Drywell differential pressure (D/P) switch PDS-59-106A, which shares the sensing line as the drywell pressure instruments, the section of tubing between the D/P switch bypass valve and the low pressure side isolation valve was pressurized to instrument gas system pressure. When the D/P switch low pressure isolation valve was subsequently opened, this trapped pressurized air was released. The momentary pressure surge in the Drywell pressure sensing line exceeded the drywell pressure instrument trip setpoint of 1.68 psig, resulting in the spurious Division 1 Loss of Coolant Accident signal. During the event, reactor vessel level increased eight inches and no significant reactor coolant heatup occurred during the time when shutdown cooling was lost. The cause of this event was an incorrect procedure. The procedure's particular sequence of restoring instrumentation and the restoration valving sequence for the D/P switch caused the event. PECo is performing a detailed review of the event and will implement procedure enhancements to prevent recurrence. The corrective actions will be reviewed upon submittal of the licensee event report.

1.2.2 Unit 2

On November 1, a half scram and various system isolation signals occurred when the 2B2 reactor protection system circuit breaker tripped. The breaker tripped unexpectedly while the power feeds were being realigned to support maintenance on the technical support center static inverters. On October 3, 1990, a plant operator had identified a problem with the 2B RPS Inverter in that a warning light was on indicating that there was a potential problem with the circuitry which synchronizes the primary and alternate power supplies. The synchronization is necessary to ensure that during a transfer from the primary to alternate source, a voltage or frequency transient does not result in an RPS output circuit breaker trip. For undetermined reasons a maintenance request form (MRF) was not initiated to effect repairs on the synchronization circuit. Therefore, during the realignment of the power feeds for maintenance on November 1, when the alternate supply was reenergized the defective circuit caused a transient on the RPS inverter output and resulted in the breaker trip.

The breaker was subsequently reset and all systems restored to normal with no significant impact on plant operations. The failure to generate a MRF to accomplish the inverter repairs appears to be an isolated occurrence. Procedural changes were also initiated to ensure that prior to realigning power supplies all inverter operating conditions are normal.

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

2.0 SURVEILLANCE/SPECIAL TEST OBSERVATIONS

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 accordance with PECo 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 testing observed and/or reviewed included:

ST-6-052-231-1	A Loop Core Spray Pump, Valve and Flow Test
ST-6-011-452-0	B Loop ESW Lineup Verification
ST-6-051-202-1	A Loop RHR Cold Shutdown Valve Test

No problems or concerns were noted by the inspectors.

3.0 MAINTENA. CE OBSERVATIONS

The inspector reviewe. the safety related maintenance activities associated with the modifications discussed in section 4.1, as well as maintenance activities on the refuel floor, to verify that the maintenance was performed in accordance with approved procedures and in compliance with NRC regulations and recognized codes and standards. The inspector also verified that the parts and quality control utilized during the maintenance were in compliance with the licensee's QA program.

On November 7, 1990, during an inspection of the refuel floor area, the inspector observed that there were items within the clean area surrounding the reactor cavity that were not being managed in accordance with the procedure for working in a housekeeping Zone II area. " . edure A-30, "Plant Housekeeping," requires that tools and loose objects taken into an exclusion area be accounted for by a Material Accountability Log and that they be secured to a person or stationary object by a lanyard or other restraining device. The inspector observed a knife, not secured in a proper manner, discarded onto the floor after removing a polyethylene covering from the steam dryer. The knife bounced around, but did not enter the cavity due to a raised lip that surrounds the cavity. It was later identified that the knife had been handed over the barrier and not recorded in the accountability log. Other hand tools, a portable radiation monitoring device, and a copy of a procedure were also observed laying around in the exclusion area, without being properly restrained.

The inspector discussed his observations with PECo personnel on the refueling floor and later with plant management. The refueling floor supervisor did not control the matter very effectively because a worker was later seen holding a procedure over the open cavity. Additional conversations with PECo management indicated that the new crew (recently assigned) was not fully staffed to provide the necessary oversight.

PECo management implemented the following corrective actions:

- A dedicated accountability person was assigned to account for materials in the controlled area;

- Individual meetings were conducted with all personnel assigned to the controlled area, stressing the importance of the accountability for loose materials;

- The individual improperly using the knife has been counseled regarding the lack of control of loose material; and

- Two additional foremen will be added to the crews in order to have continuous refuel floor supervision.

Since the incident discussed above, the inspectors have verified that the housekeeping zones have shown considerable improvement, training was presented to all personnel delineating the importance of securing loose objects in certain housekeeping areas, and the commitment to supplement the crews with additional supervision for future activities will be implemented before the next refueling. Based on the appropriate corrective actions and the minor severity of this procedural violation, this violation satisfies the criteria as stated in 10 CFR 2, Appendix C, Section V.A, and as such no violation will be issued. (NON 50-352/90-25-01)

4.0 ENGINEERING AND TECHNICAL SUPPORT

4.1 Design Modifications

The inspectors continued to review modifications being installed during the Unit 1 third refueling outage to verify conformity with NRC regulations and PECo commitments. The modifications reviewed are listed below. The inspectors' review included:

- Verification that the new designs conform with commitments made in the license amendment request for facility modifications which required prior commission review and approval;
- Verification that modifications that did not require prior commission approval were reviewed and approved by the appropriate organizations in accordance with Technical Specifications;
- Observation of work in progress and/or examination of installation records;
- Verification that new or revised procedures relating to the modification were completed and approved in accordance with Technical Specification requirements, and that Technical Specifications, if applicable, were updated;
- Verification that operator training programs were revised in a reasonable time frame consistent with implementation of the modification;
- Verification of Quality Control/Quality Assurance involvement via reviews and work hold points by the PECo QC/QA Department;
- Observation and/or review of modification acceptance tests; and
- Verification that as-built drawings were revised to reflect the modification and that control room drawings were revised before system startup.

4.1.1 Modification 5085 - Replacement of Rosemount Model 1151 Transmitters with Rosemount Model 1153 Transmitters

Because the currently installed 1151 transmitters, which require harsh environment qualification, are nearing the end of their qualified life cycle (the fourth refueling outage for

Unit 1) and new 1151 transmitters are unavailable, this design change was instituted to evaluate the 1153 replacement transmitters for their applicability in the environment that they will be installed. There are a total of one hundred eighteen 1151 transmitters that require replacement. Sixty eight are being replaced this outage (third refueling outage) to lessen the impact on the next outage. The impact also relates to removing critical systems from service during replacement.

The inspector reviewed the documents listed in Attachment A to ascertain if the installed and tested instruments met the requirements of the design change. The inspector concluded that this modification was installed and tested properly and had no further questions.

In addition, the inspector verified that the new 1153 transmitters meet the requirements necessary to conform with those concerns identified in NRC Bulletin 90-01 "Loss of Fill-Oil in Transmitters Manufactured by Rosemount," and that they also meet the requirements of environmental qualification in accordance with 10 CFR 50.49, Regulatory Guide 1.89, Rev. 1 "Environmental Qualification of Certain Electrical Equipment Important to Safety for Nuclear Power Plants," and IEEE Standard 323-1974; and IEEE Standard 344-1975 for seismic consideration.

4.1.2 Modification 5791 - Suppression Pool Flow Orifice Installation

This modification replaced four existing first stage flow reducing orifices (FO-120 A/B and FO-121 A/B) on the low pressure coolant injection (LPCI) system test return lines and added two new second stage orifice spool pieces (FO-122 A/B) to the ends of the lines in the suppression pool. The modification also incorporated an upturn in the piping of the suppression pool to reduce temperature stratification during suppression pool cooling by promoting better mixing of the water. The orifices are intended to reduce the amount of throttling, that is required by valves HV-51-1F024A/B and HV-51-1F010A/B, in order to prevent residual heat removal (RHR) pump run out during testing. This modification was installed in Unit 2 prior to startup and has been successful in preventing pump run out and provides better mixing to prevent temperature stratification in the suppression pool during cooling.

The inspector reviewed the documents listed in Attachment A to ascertain if the installed orifices and piping met the requirements of the design change. The inspector concluded that this modification was installed and tested properly and in accordance with the requirements of Section XI of the ASME code. No unacceptable conditions were identified.

4.1.3 Modification 5816-1 - Addition of Check Valves to the Control Rod Drive System

This modification adds check valves in the headers to the hydraulic control units (HCUs) to serve as primary containment isolation valves (PCIVs). This reduces the number of test boundary points associated with the HCUs from approximately 1300 to 8, thus facilitating prompt identification and correction of leaks during the integrated leak rate test (ILRT).

This modification required a change to Technical Specification (TS) Table 3.6.3-1, Part A-Primary Containment Isolation Valves, to revise the boundary from the HCU to the new check valves. PECo submitted a TS amendment request and the NRC subsequently issued Amendment Number 42 approving the change to Table 3.6.3-1.

The inspector reviewed the documents listed in Attachment A and inspected the field installation. The results of the Modification Acceptance Test (MAT) were also reviewed. All aspects of the modification were well documented and no unacceptable conditions were identified.

4.1.4 Modification 5994 - Installation of a Manual Transfer Switch and Alternate Power Supply for RCIC Turbine Steam Supply Valve HV-49-1F007

The purpose of this modification is to add the capability to supply power to the reactor core isolation cooling (RCIC) system turbine steam supply valve (HV-49-1F007) from an alternate power source (Division 1) in the event of a fire-caused emergency which results in Division 3 power not being available. This modification was installed in Unit 2 prior to the unit's initial start up.

The inspector discussed details of the modification with applicable personnel, reviewed the documents listed in Attachment A and observed work activities in the field. At the end of the inspection period, all field work for the modification was complete. Modification acceptance testing and the revision of applicable procedures were not yet completed. Thus far, the inspector did not identify any unacceptable conditions.

4.1.5 Modification 5995 - Installation of HPCI Emergency Shutdown Switch

The purpose of this modification is to install an emergency shutdown switch at the Remote Shutdown Panel (RSP), 10C201, to permit the high pressure coolant injection (HPCI) system to be shutdown quickly during spurious HPCI operation when normal HPCI shutdown circuits are disabled. Spurious HPCI operation could flood the main steam lines and prevent RCIC operation. The objective of this modification is to assure HPCI shutdown capability and RCIC availability in case of a fire which requires the RCIC system for safe shutdown. The modification was installed in Unit 2 prior to the unit's initial start up.

The inspector reviewed the documents listed in Attachment A and discussed details of the modification with applicable personnel. At the end of the inspection period, modification acceptance testing and procedure changes were not complete. Thus far, no discrepancies have been noted.

4.2 Review of Additional Information Regarding Rosemount Transmitters

Bulletin 90-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount," required licensees to evaluate installed Rosemount transmitters. PECo performed the evaluation, as required, and responded to the NRC in a letter dated July 13, 1990. PECo's letter described their program and their ongoing monitoring and analysis of Rosemount Transmitters. Recent trends of certain installed transmitters prompted a supplement response to the July letter. The resident inspector reviewed PECo's actions and response dated October 16, 1990 and noted the following:

- Thirty of the installed transmitters were highlighted by computer records as having the potential for "loss of fill-oil;"
- Further analysis showed that four of the thirty transmitters could have "loss of fill-oil;"
- However, none of these transmitters were in reactor protection or engineered safety feature systems.

After discussions with on-site engineers, PECo stated they will continue to monitor the installed Rosemount transmitters and determine replacement of defective transmitters as necessary. The inspector has no further questions at this time regarding the monitoring program.

5.0 RADIOLOGICAL PROTECTION

On November 8, 1990 at 2:15 p.m., eight workers, who had been installing scaffolding, were found to be contaminated when exiting the Unit 1 Reactor Building. PECo performed an investigation to find the source of the contamination and to assess the exposure to the contaminated individuals.

PECo performed a whole body count on the workers which showed that no one had received a body burden of any isotope in excess of 0.4%. PECo's procedures do not require any action until 1% of a body burden is reached; however, in this case, PECo proceeded to conduct additional whole body counts to determine if the received doses were surface or injected which can be determined by additional counting. PECo later determined the activity to be surface contamination.

Due to an oversight on the part of health physics personnel, the workers put on their clothing after initially showering as part of the decontamination procedure. This resulted in erroneous readings during the whole body count because of the contamination on the clothing. Although not detectable by frisking methods, the low level contamination was detectable by the whole body counter. When the error was discovered, the workers were required to shower again and have a second whole body count. This caused the workers to be concerned about their well being. The workers were counseled by PECo health physics supervision concerning the above sequence and the effects of the small amount of exposure they received as a result of the contamination.

The reason for the contamination on the 177 foot elevation of the reactor building was traced to the draining of the reactor cavity following refueling. This evolution had previously been performed on Unit 1 without resulting in any contamination. However, PECo had made changes to the drain system during the last operating cycle, first by hydrolazing debris from the drain lines in order to reduce radiation levels, and second by removing the loop seal from the drain line to prevent siphoning of the reactor building sump. The result of these changes is that the reactor cavity drains to the reactor sump faster and creates a splashing, spray effect in the sump. In this event, this created airborne problem which contaminated the 177 foot level of the reactor building and, consequently, the workers in that area.

The area has been cleaned and returned to a clean area. PECo engineering is investigating a change in the way the reactor cavity will be drained in the future. The inspector had no further questions at this time.

6.0 SAFETY ASSESSMENT/QUALITY VERIFICATION

The inspector reviewed the qualifications of Mr. John Doering Jr. and Mr. Robert Boyce to ensure they satisfy the requirements of ANSI/ANS-3.1-1978 as specified by plant Technical Specification 6.3.1. The inspector concluded that Mr. Doering and Mr. Boyce, who will be assuming the positions of plant manager and maintenance manager, respectively, fully meet the qualification requirements.

7.0 REVIEW OF LICENSEE EVENT AND SPECIAL REPORTS

The following LERs 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:

7.1 Unit 1

7.1.1 Special Report 1-90-019, September 15, 1990

Failure of the D13 Emergency Diesel Generator (EDG) occurred during conduct of a surveillance test (ST). While ST procedure ST-1-092-113-1, "D13 Diesel Generator 4KV SFGD Loss of Power LSF/SAA and Outage Testing," was being performed, a Division 3 AC Safeguard Bus overvoltage condition occurred during energization from the D13 EDG on the simulated loss of off site power. As a result of the overvoltage condition, the D13 EDG output breaker was manually tripped by operations personnel from the main control room and the EDG control switch was placed to STOP.

Following investigation into the causes and the implementation of immediate corrective actions for this event, the equipment powered by the Division 3 Safeguard Bus was declared operable on September 18 and the D13 EDG was declared operable on September 30. The cause of the overvoltage condition was found to be a failure of the diesel's number one rectifier bank. A failure analysis was initiated to determine the root cause of the rectifier failure. The results of the analysis will be provided in a supplement to this special report.

7.1.2 Special Report 1-90-022, October 3, 1990

Failure of the D11 Emergency Diesel Generator to start due to an improperly operating voltage sensing relay. The contacts on the voltage sensing relay were in a degraded (i.e. badly pitted) condition preventing the "ready to load" relay from energizing which is required to close the EDG output breaker. Following replacement of the voltage sensing relay, the D11 EDG was declared operable on October 5, 1990.

7.1.3 LER 1-90-023, November 16, 1990

This report was written when further review of special report 1-90-019 (see above) identified a condition prohibited by Technical Specification. The Emergency Diesel Generators (EDGs) for Unit 1 and Unit 2 were inoperable on various occasions between March 1989 and October 1990, due to inadequate surveillance testing of the redundant rectifier banks installed in the voltage regulation circuit in the EDG System.

During portions of 1989, the rectifier banks for the Unit 1 and Unit 2 EDGs were alternately switched between the primary rectifier bank and the redundant bank at the beginning of the performance of the monthly operability EDG tests. As a result of this practice, only one set of rectifier banks had been tested during both of the monthly operability tests and the Loss of Offsite Power (LOOP) test, while the redundant bank had only been tested in the monthly operability test. The operability of the Unit 1 and Unit 2 EDGs was verified with only one of the two available rectifier banks in service during LOOP testing.

On October 17, PECo removed all of the inadequately tested rectifier banks from service to prevent alignment for use in the EDG voltage regulation circuits. These rectifier banks for EDG 12, 13 and 14 have already been tested and 11 will be tested on the next schedule performance of the surveillance. Unit 2 EDGs will be tested during their next scheduled surveillance. The EDGs have all been tested on the currently aligned rectifier bank. The resident inspector is satisfied with PECo's progress to date and notes that a root cause analysis is being performed to establish the cause for the surveillance discrepancy.

7.1.4 Monthly Operating Report for October 1990, dated November 6, 1990

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

7.2 Unit 2

7.2.1 Special Report 2-90-018, November 13, 1990

This special report was submitted because the North Stack Wide Range Accident Monitor (WRAM) was out of service longer than the allowable seven days delineated in Technical Specifications. During surveillance testing following maintenance, it was discovered that the WRAM was reading approximately 7% high when compared to base line data. Additional testing, investigation and corrective action to recalibrate the detector was required, lengthening the outage time to eight days, eight hours. During this time there was not an accident, and the low and middle range of the WRAM were in service and, if needed, the 7% error would have provided reading that would have been conservative. PECo plans to monitor the WRAM for the next six months to identify and correct any additional drift or degradation. PECo also detected errors in their calibration procedure which have subsequently been corrected. The inspector has no further questions regarding this event.

7.2.2 Monthly Operating Report for October 1990, dated November 6, 1990

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

8.0 EMERGENCY DIESEL GENERATOR (EDG) FUEL OIL (TI 2515/93)

PECo's program for assuring quality of the diesel generator fuel oil at Limerick was reviewed per Temporary Instruction (TI) 2515/100 and documented as being adequate in Inspection Report 50-352/89-10 and 50-353/89-16 dated June 30, 1989. Based upon the results of that inspection, TI 2515/93, "Verification of Quality Assurance Regarding Diesel Generator Fuel Oil," is considered closed for both Units 1 and 2.

9.0 MANAGEMENT MEETINGS

9.1 Exit Interview

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 site Vice President, Mr. G. M. Leitch on November 16, 1990. No written inspection material was provided to licensee representatives during the inspection period.

9.2 Additional NRC Inspections this Period

The following inspector exit interview was attended during the report period:

Date	Subject	Report	Inspector
November 1	Maintenance Team Inspection follow up	90-26/90-25	Don Taylor

ATTACHMENT A

Modification 5085, Documents reviewed.

Modification package including calculations, instrument loop data sheets, instrument verification check sheets, 50.59 review, dynamic calculations, and installation lists.

Bulletin 80-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount"

Reg. Guide 1.89, Rev. 1, "Environmental Qualification of Certain Electrical Equipment Important to Safety for Nuclear Power Plants"

Maintenance Request Forms (MRFs) (Representative sample of modification):
- 9002497, Installation of Mod. 5085
- 9004273, Backfilling instrument lines
- 9081106, Replacement of transmitter LT-042-1N097A
- 9081132, Replacement of transmitter PT-042-1N050A
- 9004279, Backfilling instrument lines
- 9081096, Replacement of transmitter LT-042-1N080D
- 9081098, Replacement of transmitter LT-042-1N081D
- 9081101, Replacement of transmitter LT-042-1N091D
- 9081140, Replacement of transmitter PT-042-1N090D
- 9081156, Replacement of transmitter PT-042-1N094H
- ST-2-042-453-1, Surveillance Test "Calibration Test" for the above MRFs
- ST-2-036-674-1, Surveillance Test "Backfill Instrument Lines" for the above MRFs

Modification 5791, Documents reviewed.

Modification package including calculations, 50.59 review, design input document, and installation instructions.

Maintenance Request Forms (MRFs)

- 9001912, Installation of flow orifices FO-051-120 A and B and 121 A and B

- 9001902, 9001903, 9001906, 9001907, 9001909, 9001910 and 9001913 which support the above modification

Blocking Permits 1-051-0066, 0067

Certificates of Conformance (CofC) for orifice plate material, 18 inch carbon steel piping, bolts and nuts, welding rod, gaskets and gasket material, and backing ring material

QA receipt and inspection documents for CofC

Field weld check off sheets

Filler metal receipt authorization

Welding procedures - Gas tungsten-arc and shielded metal-arc of carbon steel. Shielded metal-arc welding of carbon steel using low hydrogen electrodes

Welder Performance Qualification Test Records

Test procedures

ST-6-051-231-1, "A" RHR Pump, Valve and Flow Check

ST-6-051-232-1, "C" RHR Pump, Valve and Flow Check

<u>Modification 5816-1, Documents reviewed.</u>

License Amendment No. 42, Technical Specification Revision to add the new CRD system isolation valves

Modification 5816-1, 10 CFR 50.59, Review and Safety Evaluation dated January 19, 1990

MRF	90-1402 90-1529	Check valve installation in CRD drive line and hydrostatic test of new welds
MRF	90-1405 90-1530	Check valve installation in CRD cooling supply line and hydrostatic test of new welds
MRF	90-1406 90-1528	Check valve installation in CRD exhaust line and hydrostatic test of new welds
MRF	90-1407 90-1527	Check valve installation in CRD charging lines and hydrostatic test of new welds
MAT	1586	LGS Unit 1 CRD isolation boundary modification acceptance test

S46.1.A, Rev. 5, Control rod drive hydraulic system start up

1S46.1.A(COL) Rev. 7, Valve and breaker alignment for start up of the control rod drive hydraulic supply system

ST-1-LLR-363-1, Rev. 0, CRD Cooling water heater LLRT

ST-1-LLR-364-1, Rev. 0, CRD Drive Water Header LLRT

ST-1-LLR-365-1, Rev. 0 CRD Exhaust water header LLRT

Mod. 5816-1, Training Bulletin

Modification 5994, Documents reviewed.

Safety Evaluation, PORC approved March 14, 1990

Technical Specification Amendment No. 45, dated September 19, 1990

MRF-90-01838, Installation of new breaker

MRF-90-01839, Installation of fuse

MRF-90-02353, Perform internal wiring modifications

MRF-90-02354, Cable pull

MRF-90-02357, Perform internal wiring modifications

MRF-90-02359, Rewire panel 10TB49-1F007

MRF-90-02360, Cable pull and work to satisfy separation requirements

MRF-90-02363, Install emergency lighting

Troubleshooting Control Form (TCF) 90-1471 and 90-1466

Electrical Test Record (ETR) #001, Mod. S994-1. Job Title: Addition of Transfer [illegible] or Valve HV-49-1F007, Revision 2

Nonconformance Reports (NCR) L90-191 and L90-206

Special Event Procedure, SE-1, "Remote Shutdown," Revision 18, dated November 14, 1990

SE-8, Attachment A, "Safe Shutdown Method A," Revision 11, November 14, 1990

Modification 5995, Documents reviewed.

Safety Evaluation, PORC approved March 14, 1990

MRF-90-01769, Installation of new switch in Remote Shutdown Panel (RSP) 10-C201

MRF-90-01770, Perform wiring changes in panel 10-C620

MRF-90-01771, Perform wiring modifications in control room panel 10-C647

MRF-90-01772, Cable pulls

MRF-90-01773, Cable terminated in panel 10-C2C1 and spliced in various reactor building J-boxes

ETR #001, Mod. 5995-1. Job Title: Installation of a HPCI Shutdown Switch at RSP 10-C201

TCF 90-1566, dated October 30, 1990

Licensee Event Report (LER) 89-002, dated March 31, 1989

NCR L-90193

SE-1, "Remote Shutdown," Revision 18, dated November 14, 1990

SE-8, Attachment A, "Safe Shutdown Method A," Revision 11, November 14, 1990