

January 24, 2001

EA-01-008

Mr. Oliver D. Kingsley
Chief Nuclear Officer
Exelon Generation Company
1400 Opus Place
Downers Grove, IL 60515-5701

SUBJECT: LIMERICK GENERATING STATION - NRC INSPECTION REPORT
05000352/2000-009, 05000353/2000-009

Dear Mr. Kingsley:

On December 31, 2000, the NRC completed an inspection at your Limerick Units 1 and 2. The enclosed report documents the inspection findings which were discussed on January 10, 2001, with Mr. R. Braun and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified one Severity Level IV violation of NRC requirements related to 10 CFR 50.59. Because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this Non-Cited Violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Limerick facility.

O.D. Kingsley

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Sincerely,

/RA/

Curtis J. Cowgill, Chief
Project Branch 4
Division of Reactor Projects

Docket Nos.: 05000352, 05000353

License Nos: NPF-39, NPF-85

Enclosure(s):

Inspection Report 05000352/2000-009, 05000353/2000-009

Attachments: (1) Supplemental Information
(2) NRC Revised Reactor Oversight Process

cc w/encl:

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J. Skolds, Chief Operating Officer

G. Hunger, Chairman, Nuclear Review Board

J. A. Hutton, Director of Licensing, Exelon Generation Company

J. Benjamin, Licensing Vice President, Exelon Nuclear

J. D. von Suskil, Vice President, Limerick Generating Station

R.C. Braun, Plant Manager, Limerick Generating Station

K. Gallogly, Manager, Experience Assessment

Secretary, Nuclear Committee of the Board

Commonwealth of Pennsylvania

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U.S. NUCLEAR REGULATORY COMMISSION

REGION 1

Docket Nos: 05000352, 05000353
License Nos: NPF-39, NPF-85

Report No: 05000352/2000-009, 05000353/2000-009

Licensee: Exelon Generation Company
Correspondence Control
P. O. Box 160
Kennett Square, PA 19348

Facility: Limerick Generating Station, Units 1 & 2

Location: Evergreen and Sanatoga Roads
Sanatoga, PA 19464

Dates: November 12, 2000 - December 31, 2000

Inspectors: A. Burritt, Senior Resident Inspector
D. Cullison, Resident Inspector
B. Welling, Resident Inspector
L. Peluso, Health Physicist
M. Gray, Reactor Engineer
G. Cranston, Reactor Engineer

Approved by: Curtis Cowgill, Chief
Projects Branch 4
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000352/2000-009, IR 05000353/2000-009, on 11/12-12/31/2000; PECO Energy Company; Limerick Generating Station; Units 1 and 2; Temporary Modifications.

The inspection was conducted by resident inspectors, regional reactor engineers, and a regional radiation specialist. The inspection identified one Severity Level IV Non-Cited Violation. The significance of findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation.

A. Inspector Identified Findings

Cornerstone: Barrier Integrity

- No color. The inspectors identified a Severity Level IV Non-Cited Violation for the failure to properly evaluate facility changes as required by 10 CFR 50.59 for installation of temporary ventilation in the Unit 1A reactor water cleanup (RWCU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RWCU isolation logic and on the combustible loading in the area.

The results of the violation were assessed as very low safety significance (green) because the impact on the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)

B. PECO Identified Violations

Violations of very low significance which were identified by PECO have been reviewed by the inspector. Corrective actions taken or planned by PECO appear reasonable. (Section 4OA7)

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Report Details

Summary of Plant Status

Unit 1 began this inspection period operating at 100% power and remained at or near that power level except as described below:

December 15: Operators reduced power to approximately 66% and removed the 1B reactor feed pump from service due to high vibration. Unit load was subsequently increased to approximately 85% with two reactor feed pumps in service.

December 23: Operators restored the unit to 100% following repairs to the 1B reactor feed pump.

Unit 2 began this inspection period operating at 100% power and remained at or near that power level except as described below:

December 19: The unit entered end-of-cycle coast down. Power level at the end of the period was approximately 98%.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors reviewed PECO's preparations for a winter storm in late December 2000. Selected items, systems, and components in GP-7, "Cold Weather Preparation and Operation," and SE-14, "Snow," were inspected.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors performed a partial walkdown of the Unit 2 "A", "B", and "C" residual heat removal trains while the Unit 2 "D" residual heat removal train was out of service for planned maintenance.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)a. Inspection Scope

The inspectors toured high risk areas at both Limerick units to assess PECO's control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The fire areas included:

- D-22 emergency diesel generator compartment (fire area 81)
- D-23 emergency diesel generator compartment (fire area 84)
- Off-site power source (20 Bus) room (fire area 2)

The inspectors also performed a limited review of combustible material and ignition sources for the 1A reactor water cleanup compartment and isolation valve room (fire area 47). This inspection activity involved an in-office review of a temporary plant modification that added combustible material to fire area 47 and is documented in section 1R23 of this report.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)a. Inspection Scope

The inspectors reviewed the periodic evaluations required by 10 CFR 50.65 (a)(3) to verify that structures, systems and components within the scope of the maintenance rule were included in the evaluations, and balancing of reliability and unavailability were given adequate consideration. The inspectors reviewed PECO's most recent periodic evaluation reports. The periodic report for Limerick Unit 1 and common systems covered the period from April 1, 1998 through February 29, 2000. The periodic report for Limerick Unit 2 covered the period from February 1, 1997 through February 28, 1999.

The inspectors selected the following portions of safety significant systems that either were in a(1) status or remain in a(1) status to verify that; (1) goals and performance criteria were appropriate, (2) industry operating experience was considered, (3) corrective action plans were effective, and (4) performance was being effectively monitored. The inspectors also reviewed PECO's assessment of the balance between reliability and availability for these systems.

- Limerick Common Emergency Service Water System
- Limerick Unit 1 and 2 Substations and Main Transformers
- Limerick Unit 2 Safety Relief Valves
- Limerick Unit 1 and 2 Primary Containment Isolation System
- Limerick Unit 1 and 2 Emergency Diesel Generators
- Limerick Unit 1 and 2 Plant Process Radiation Monitors

The inspectors reviewed the following safety significant systems in a(2) status to verify that system performance compared to PECO's performance criteria was acceptable.

- Limerick Unit 1 and 2 Primary Containment Isolation Valves
- Limerick Unit 2 Reactor Core Isolation Cooling System
- Limerick Common Emergency Service Water System (portion not in a(1) status)
- Limerick Unit 1 Standby Liquid Control System
- Limerick Unit 1 Feedwater System
- Limerick Unit 1 and 2 Primary Containment Instrument Gas System

The inspectors reviewed PECO's actions with respect to the Maintenance Rule for the following equipment performance problems:

- Unit 2 control rod 42-47 drift - loose wiring.
- High pressure coolant injection high temperature isolation - temperature element isolation amplifier failure
- D13 4KV undervoltage relay - degraded

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed PECO's risk management and risk assessments as required by 10 CFR 50.65 (a)(4) for the following emergent and planned maintenance activities:

- Off-site power source (20 Bus) outage
- 2D residual heat removal system outage
- Unit 2 high pressure coolant injection system surveillance testing

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability evaluations associated with the following plant equipment conditions:

- D-23 emergency diesel generator - fuel rack pin not engaged in injector pump
- Unit 1 reactor core isolation cooling - flow perturbations
- D-14 emergency diesel generator - excessive fuel rack movement

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the post maintenance tests and reviewed the test data for the following:

- D-24 4KV bus undervoltage relay replacement
- D-21 fuel oil transfer pump and coupling maintenance
- 1B residual heat removal (RHR) system outage window

The inspectors also reviewed the adequacy of the post maintenance test for the 1B RHR system following a system outage window in the previous inspection period. The post maintenance test performed was ST-6-051-232-1, "B RHR Pump, Valve, and Flow Test." The inspectors reviewed this surveillance test procedure to determine if it was consistent with the RHR system design and licensing requirements. In addition, the inspectors interviewed the system manager and other engineering personnel.

b. Findings

The inspectors identified that the suppression pool spray safety function of the RHR system was not being tested consistent with design requirements. Specifically, the surveillance test procedure did not verify the ability to achieve the required 500 gpm flow through the suppression pool spray header with the RHR system at rated flow of 10,000 gpm. The 500 gpm flow through the suppression pool spray header is necessary to mitigate postulated drywell to suppression chamber leakage.

Technical Specification surveillance requirement 4.6.2.2.b verifies the ability of the required RHR pumps to develop flow through the RHR heat exchanger and at least 500 gpm through the suppression pool spray header. In steps 4.6.11 thru 4.6.17 of procedure ST-6-051-232-1, suppression pool spray flow is measured by first establishing a total RHR flow rate of 5,000 gpm (instead of 10,000 gpm) to the suppression pool and then opening the suppression pool spray isolation valve. The resulting increase in total flow is considered to be the amount of flow through the suppression pool spray header. Conducting the test with a lower RHR loop flow could adversely impact the test results. PECO's engineering staff stated that testing at rated RHR loop flow was not practical due to the lack of suppression pool spray header flow instrumentation and the fact that the available instrumentation provided anomalous test results at the higher RHR flows. Nonetheless, PECO did not have an assessment or calculation to correlate how the observed testing verified that the design requirements could be met. This issue is unresolved (**URI 05000352;353/2000-009-01**) pending PECO's evaluation of the acceptability of the alternate testing method.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed and reviewed the results of several scheduled equipment surveillance tests, including:

- ST-6-049-230-2, Reactor Core Isolation Cooling Pump, Valve and Flow Test (Unit 2)
- ST-6-055-230-2, High Pressure Coolant Injection Pump, Valve and Flow Test (Unit 2)
- ST-2-055-101-1, High Pressure Coolant Injection Logic System Functional/Simulated Automatic Actuation - Non-Outage (Unit 1)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)a. Inspection Scope

The inspector reviewed a temporary change to the turbine building ventilation supply damper interlocks which allowed opening to improve recirculation motor generator cooling without the turbine building supply fans operating.

The inspector also reviewed a temporary modification which installed two 500 cfm high efficiency particulate air (HEPA) filter fan units and associated flexible duct work in the 1A Reactor Water Cleanup (RWCU) pump room and adjacent primary containment isolation valve (PCIV) room on September 15, 2000. These fan units were installed to transfer air from above the RWCU pump to the PCIV room in an effort to enhance mixing of the air inside the RWCU pump room. The modification was installed to reduce the differential temperature between room intake and exhaust air and thereby increase the margin to the isolation set point. The differential temperature elements are part of the leak detection system which will isolate the RWCU system in the event of a leak. The PECO staff was concerned that during the times of the year when warm days are followed by cold nights and the auxiliary steam system has not been placed in service that a false high differential temperature isolation may occur.

The inspector evaluated these temporary modifications against the requirements in PECO procedure MOD-C-7, "Temporary Plant Alterations" and the fire protection requirements in the Updated Final Safety Analysis Report (UFSAR). The inspector also reviewed the adequacy of engineering evaluations used to justify the installation of the modifications. The inspector discussed this issue with engineering personnel involved in performing the engineering evaluation.

b. Findings

The inspectors identified that the engineering staff did not properly evaluate the installation of temporary ventilation in a RWCU pump room and adjacent PCIV room as

required by 10 CFR 50.59. Specifically, engineering did not evaluate the impact on the steam leak detection system sensitivity or the combustible loading in the RWCU rooms.

The temporary modification resulted in approximately 1,000 cfm of hot air, which is about 50% of the normal ventilation flow, being removed from the room in the area near one of the differential temperature elements. Additionally, the temporary fans changed the air circulation within the pump room and caused cooler air to be drawn higher in the room. The change in circulation combined with the removal of hot air lowered the sensed ventilation system differential temperature, potentially impacted the steam leak detection isolation setpoint assumptions. Lower than assumed temperatures without a leak could delay the generation of an isolation signal following a leak in the RWCU system and adversely impact the associated isolation safety function.

The temporary modification also involved installation of temporary equipment in the RWCU rooms. While the fan units were not considered to be combustible, the flexible duct work was made from a flame-retardant, combustible material. The USFAR Table 9A-1 requires that any increase in the combustible loading in those rooms be reviewed and approved by PECO's fire protection engineer. The inspectors informed the shift manager on November 29, 2000, and the fans and the associated combustible equipment were removed. In addition, PECO performed a combustible loading evaluation and determined that the installation of the flexible duct work increased the combustible loading beyond the amount assumed in the fire hazard analysis, but did not significantly increase either room's fire severity level.

10 CFR 50.59 allows the licensee to make changes to their facilities described in the updated final safety analysis report, without Commission approval, unless the proposed change involves a change in the technical specifications or involves an unreviewed safety question. Records of such changes must include a written safety evaluation that provides the bases for the determination that the change does not involve an unreviewed safety question. In September 2000, the PECO staff installed a temporary modification in the 1A RWCU pump room and adjacent PCIV room which made changes to the ventilation flow in the 1A RWCU pump room and the combustible loading in both rooms. The change in ventilation flow may have affected the assumptions used to develop the leak detection system isolation setpoints required by technical specifications. The increase in combustible loading, beyond that assumed in the UFSAR fire hazards analysis, may have increased the probability of a fire occurring in those rooms or increased the severity of a fire if one did occur. The temporary modification was installed without determining if the proposed changes involved changes in the technical specifications or unreviewed safety questions. As a result, the record of the change did not include a written safety evaluation. Failure to perform a safety evaluation of the impact of the installation of the temporary modification in the RWCU pump room and PCIV room is a violation of 10 CFR 50.59.

In accordance the NRC's Enforcement Policy violations of 10 CFR 50.59 are dispositioned outside of the significance determination process because violations of 10 CFR 50.59 are considered to Impact the Regulatory Process. The result of this 10 CFR 50.59 violation, however, was assessed through the significance determination process (SDP) because the change to RWCU pump room ventilation, without appropriate evaluation, created a credible impact on safety in that it could result in the

delaying the containment isolation response to an RWCU leak, and thereby affect the barrier integrity cornerstone. Additionally, the increased combustible loading in the RWCU rooms created a credible impact on safety in that it was more than assumed in the fire hazards analysis and could increase the probability or severity of a fire in those areas. Nonetheless, the change to the ventilation system was found to be of very low safety significance (Green) using the reactor safety SDP because the delay in the containment isolation due to a RWCU leak in these relatively small rooms would be minimal and did not represent an actual open pathway or reduction of atmospheric pressure control function of containment. Also, the change in combustible loading was found to be of very low safety significance using the seismic, fire flooding and severe weather SDP as there was no significant increase in the fire severity levels in the RWCU room and no loss or degradation of equipment or function designed to mitigate a fire. Due to the overall very low safety significance, this violation of 10 CFR 50.59 was categorized at Severity Level IV and was treated as a non-cited violation (**NCV 05000352/2000-09-02**) consistent with Section VI.A of the NRC Enforcement Policy. These issues were entered into PECO's corrective action process as Performance Enhancement Program (PEP) I0012030 and I0011999.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspector observed an emergency preparedness exercise from the Technical Support Center.

b. Findings

No findings of significance were identified.

2. **RADIATION SAFETY**

Cornerstone: Occupational Radiation Safety (OS)

2OS2 Radiation Monitoring Instrumentation (71121.03)

a. Inspection Scope

The inspector conducted a review of field instrumentation utilized by Radiation Protection technicians and plant workers to measure radioactivity. The inspector verified calibration, operability, and alarm set points of selected instruments and equipment observed in the reactor, turbine, and radioactive waste buildings. The following portable radiation instruments were reviewed: (1) ion chambers (RO2, RO2A, RO20, R07); (2) Geiger-Mueller friskers (RM14, RM20, E-140N); (3) continuous air monitors (CAMs) (AMS-3, AMS-4); (4) electronic dosimetry (RADOS); (5) personnel contamination monitors (PCM-1B) and portal monitors (PM-7); (6) small article monitors (SAM); and, (7) portable area radiation monitors (ARM) (EC4-8). The following area radiation monitors (ARMs), criticality monitors, and process monitors were reviewed: (1) main control room normal fresh air supply radiation monitor; (2) control room direct radiation monitor; (3) spent fuel storage pool criticality monitor; (3) transverse in-core

probes; and (4) high range containment radiation monitor. The calibration records for the Shepherd calibrator were reviewed for 1999 and 2000.

The assessment included a review of calibration documentation from 1999 and 2000, and procedures associated with the above instrumentation and equipment. The inspector observed radiation protection personnel conduct source checks and calibrations of selected equipment.

b. Findings

No findings of significance were identified.

.1 Respiratory Protection - SCBA

The inspector assessed the adequacy of the respiratory protection program to determine status of self-contained breathing apparatus (SCBA) required for entering and working in areas of unknown radiological and/or potential immediately dangerous to life and health (IDLH) areas. The inspector toured areas in the plant where SCBA is staged for use including the control room, on the turbine deck adjacent to the control room, in the Technical Support Center and the Operations Support Center. The inspector reviewed the surveillance records and verified that they were complete and ensured SCBA packs and bottles were appropriately staged and ready for use in the plant during an emergency. The inspector verified that the qualifications for control room operators and health physics technicians who utilize this equipment were up to date.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed the accuracy and completeness of the supporting data for the following Limerick performance indicators:

- Heat Removal System Unavailability (January 2000 to September 2000)
- Unplanned Scrams (October 1999 to September 2000)

The inspectors reviewed operating logs, surveillance test logs, clearance activities, monthly operating reports, and action requests, as applicable.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-Up (71153).1 LER 1-00-002, Rev. 1

Scram due to generator lockout following failure of a main transformer bushing connection. This LER revision changed a commitment date. No new findings of significance were identified.

.2 LER 2-00-003, Rev. 0

During surveillance testing of the high pressure coolant injection system, one of the suppression pool suction valves failed to open on the first attempt rendering the system inoperable. The valve failed to open as a result of an out of tolerance valve operator spring pack combine with a recent change to the torque switch setting. This event did not constitute a violation of NRC requirements and this LER is closed.

.3 LER 1-97-010, Rev. 1

Potential containment bypass path resulting in a condition outside of the design bases. This revision documented the completion of the final corrective actions for this issue on September 7, 2000. PECO installed a modification which prevents operating both the drywell and suppression pool nitrogen purge valves at the same time. No new findings of significance were identified.

.4 LER 1-00-004, Rev. 0

Deficient surveillance tests identified by internal Safety System Functional Inspection. This LER reports two conditions that involved inadequate surveillance test procedures for safeguard batteries on Unit 1 and the high pressure coolant injection systems on Units 1 and 2. These PECO identified violations are discussed in Section 4OA7.

.5 LER 2-00-004, Rev. 0

An unplanned engineering safety feature (ESF) actuation caused the high pressure coolant injection system to isolate rendering it inoperable. The ESF actuation was caused by an equipment failure in the steam leak detection system. This event did not constitute a violation of NRC requirements and the LER is closed.

4OA6 Meetings, Including Exit.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. Braun and other members of PECO management on January 10, 2001.

The inspectors asked PECO whether any materials examined during the inspections should be considered proprietary. No proprietary information was identified.

4OA7 PECO Identified Violations

The following findings of very low significance were identified by PECO and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy for being dispositioned as Non-Cited Violations (NCVs).

NCV Tracking NumberRequirement PECO Failed to Meet

NCV 05000352/2000-009-03

Technical Specifications Surveillance Requirement Table 4.8.2.1-1, Note 1, requires that safeguards battery parameters be restored to within limits within 7 days of the discovery of a condition outside the limits. This 7-day action period was exceeded in October, 2000, as described in LER 1-00-004. This issue was addressed in PECO's corrective action program as PEP I0011892

NCV 05000352;353/2000-009-04

Technical Specifications Surveillance Requirement 4.5.1.b.3 requires that the high pressure coolant injection (HPCI) pump develop 5600 gpm against a test line pressure of 1040 psig plus head and line losses. There were three occasions in which HPCI had not been tested consistent with these parameters, as reported in LER 1-00-004. This issue was addressed in PECO's corrective action program as PEP I0011914.

(1) SUPPLEMENTAL INFORMATION**PARTIAL LIST OF PERSONS CONTACTED**PECO Energy Company

M. Alderfer	Senior Manager - Plant Engineering
J. Armstrong	Director - Site Engineering
K. Bersticker	Engineering Programs Branch Manager
R. Braun	Plant Manager
S. Breeding	Engineering Balance of Plant Branch Manager
K. Gallogly	Experience Assessment Manager
W. Harris	Manager, Radiation Protection
J. Kraus	Senior Manager - Design Engineering
J. Tucker	Senior Manager - Operations
J. von Suskil	Site Vice President

ITEMS OPENED, CLOSED, AND DISCUSSEDOpened

URI 05000352;353/2000-009-01	Residual heat removal system suppression pool spray testing
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Opened and Closed During this Inspection

NCV 05000352/2000-09-02	Failure to perform an evaluation as required by 10 CFR 50.59 for a temporary plant modification
NCV 05000352/2000-009-03	Failure to meet Technical Specifications Surveillance Requirement Table 4.8.2.1-1, Note 1, for a safeguards battery
NCV 05000352;353/2000-009-04	Failure to meet Technical Specifications Surveillance Requirement 4.5.1.b.3 for the high pressure coolant injection pump

Closed

LER 1-00-002, Rev. 1	Scram due to generator lockout following failure of a main transformer bushing connection.
LER 2-00-003, Rev. 0	High pressure coolant injection system inoperable due to failure of a suppression pool suction valve.
LER 1-97-010, Rev. 1	Potential containment bypass path resulting in a condition outside of the design bases.

LER 1-00-004, Rev. 0	Deficient surveillance tests identified by internal Safety System Functional Inspection.
LER 2-00-004, Rev. 0	High pressure coolant injection system inoperable due to an unplanned system isolation.

PARTIAL LIST OF DOCUMENTS REVIEWED

Maintenance Rule Periodic Assessment, Limerick Generating Station, Unit 1 and Common, for period April 1, 1998 through February 29, 2000, dated April 18, 2000.

Maintenance Rule Periodic Assessment, Limerick Generating Station, Unit 2, for period February 1, 1997 through November 30, 1998, dated April 20, 1999.

Maintenance Rule Periodic Assessment, Limerick Generating Station, Unit 2, for period December 1, 1998 through February 28, 1999, dated April 20, 2000.

List of a(1) structures systems and components dated November 2000, Limerick Generating Station.

Limerick Generating Station Procedure AG-CG-28.1, Revision 7, "Maintenance Rule Implementation Program."

Limerick Generating Station Maintenance Rule Scope and Performance Monitoring Database Printout, current through November 13, 2000.

(2) NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
<ul style="list-style-type: none">● Initiating Events● Mitigating Systems● Barrier Integrity● Emergency Preparedness	<ul style="list-style-type: none">● Occupational● Public	<ul style="list-style-type: none">● Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.