

January 25, 2006

Mr. Christopher M. Crane
President and CNO
Exelon Nuclear
Exelon Generation Company, LLC
200 Exelon Way
Kennett Square, PA 19348

SUBJECT: LIMERICK GENERATING STATION - NRC INTEGRATED INSPECTION
REPORT 05000352/2005005, 05000353/2005005

Dear Mr. Crane:

On December 31, 2005, the United States Nuclear Regulatory Commission (NRC) completed an inspection at your Limerick Generating Station Units 1 and 2. The enclosed integrated report documents the inspection findings which were discussed on January 13, 2006, with Mr. R. DeGregorio 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 the inspection no findings of significance were identified. However, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. NRC is treating this violation as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC's Enforcement Policy because of the very low safety significance of the violation and because it is entered into your corrective action program. If you contest this non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, 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.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (The Public Electronic Reading Room).

Sincerely,

/RA/

James M. Trapp, Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos: 50-352; 50-353

License Nos: NPF-39; NPF-85

Enclosure: Inspection Report 05000352/2005005, 05000353/2005005
w/Attachment: Supplemental Information

cc w/encl:

Chief Operating Officer, Exelon Generation Company, LLC

Site Vice President - Limerick Generating Station

Plant Manager, Limerick Generating Station

Regulatory Assurance Manager - Limerick

Senior Vice President - Nuclear Services

Vice President - Mid-Atlantic Operations

Vice President - Operations Support

Vice President - Licensing and Regulatory Affairs

Director - Licensing and Regulatory Affairs, Exelon Generation Company, LLC

Manager, Licensing - Limerick Generating Station

Vice President, General Counsel and Secretary

Associate General Counsel, Exelon Generation Company

Correspondence Control Desk

J. Johnsrud, National Energy Committee

Chairman, Board of Supervisors of Limerick Township

R. Janati, Chief, Division of Nuclear Safety, Pennsylvania Bureau of Radiation Protection

J. Bradley Fewell, Assistant General Counsel, Exelon Nuclear

D. Allard, Director, Dept. of Environmental Protection, Bureau of Radiation Protection (SLO)

Distribution w/encl: (via E-mail)

- S. Collins, RA
- M. Dapas, DRA
- S. Lee, RI OEDO
- D. Roberts, NRR
- T. Valentine, PM (Interim), NRR
- E. Miller, PM, Backup
- J. Trapp, DRP
- A. Burritt, DRP
- S. Hansell, DRP - Senior Resident Inspector
- C. Colantoni, DRP - Resident Inspector
- K. Heater - Resident OA
- Region I Docket Room (with concurrences)
- ROPreports@nrc.gov (All IRs)

DOCUMENT NAME: E:\Filenet\ML060260337.wpd

SISP Review Complete: ARB (Reviewer's Initials)

After declaring this document "An Official Agency Record" it will/will not be released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure
"E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI:DRP		RI:DRP		RI:DRP			
NAME	SHansell/ARB for		ABurritt/ARB		JTrapp/JMT			
DATE	01/24/06		01/24/06		01/25/06			

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION 1

Docket Nos: 50-352, 50-353

License Nos: NPF-39, NPF-85

Report No: 05000352/2005005 and 05000353/2005005

Licensee: Exelon Generation Company, LLC

Facility: Limerick Generating Station, Units 1 & 2

Location: Evergreen and Sanatoga Roads
Sanatoga, PA 19464

Dates: October 1, 2005 through December 31, 2005

Inspectors: S. Hansell, Senior Resident Inspector
C. Bickett, Resident Inspector
J. Richmond, Reactor Inspector
J. Bobiak, Reactor Inspector
G. Ottenberg, Reactor Engineer
J. D'Antonio, Operations Engineer
T. Fish, Operations Engineer
N. McNamara, Emergency Preparedness Specialist
D. Silk, Emergency Preparedness Specialist
T. Moslak, Health Physicist

Approved by: James M. Trapp, Chief
Projects Branch 4
Division of Reactor Projects

TABLE OF CONTENTS

SUMMARY OF FINDINGS	iii
REACTOR SAFETY	1
1R01 Adverse Weather Protection	1
1R04 Equipment Alignment	1
1R05 Fire Protection	3
1R06 Flood Protection Measures	4
1R07 Heat Sink Performance	4
1R11 Licensed Operator Requalification	5
1R12 Maintenance Effectiveness	7
1R13 Maintenance Risk Assessments and Emergent Work Control	7
1R15 Operability Evaluations	8
1R16 Operator Workarounds	8
1R19 Post Maintenance Testing	9
1R20 Refueling and Other Outage Activities	10
1R22 Surveillance Testing	10
1R23 Temporary Plant Modifications	11
1EP6 Drill Evaluation	11
RADIATION SAFETY	12
2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems	12
2PS3 Radiological Environmental Monitoring Program	14
OTHER ACTIVITIES	14
4OA1 Performance Indicator (PI) Verification	14
4OA2 Problem Identification and Resolution	15
4OA3 Event Followup	17
4OA6 Meetings, Including Exit	17
4OA7 Licensee-Identified Violations	18
SUPPLEMENTAL INFORMATION	A-1
KEY POINTS OF CONTACT	A-1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED	A-1
LIST OF DOCUMENTS REVIEWED	A-1
LIST OF ACRONYMS	A-9

SUMMARY OF FINDINGS

IR 05000352/2005-005, IR 05000353/2005-005; 10/01/2005 - 12/31/2005; Limerick Generating Station, Units 1 and 2; Routine Integrated Report

The report covered a 3-month period of inspection by resident inspectors and region-based inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

Reactor Safety

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations.

Violations of very low safety significance, which were identified by Exelon, have been reviewed by the inspectors. Corrective actions taken or planned by Exelon have been entered into Exelon's corrective action program. The violations and corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 began this inspection period at full Rated Thermal Power (RTP) and operated at full power for the entire report period with the exception of an unplanned power reduction to 70 percent on October 28, 2005, due to a trip of a reactor feedwater pump. Unit 1 returned to 100 percent power on October 28, 2005.

Unit 2 began this inspection period at full RTP and operated at full power for the entire report period except for a reactor scram on October 12, 2005. The unit returned to full power on October 19, 2005.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 - cold weather preparation - 2 samples)

a. Inspection Scope

The inspectors reviewed Exelon's overall preparations and protection for cold weather this quarter. Specifically, on December 7 and December 22, the inspectors walked down portions of the emergency diesel generators (EDG), the condensate storage tank (CST) and surrounding dikes, and portions of the high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) systems, including associated heat tracing. These systems were selected because their safety functions could be affected by cold weather. The inspectors also observed plant conditions and conducted a review of GP-7, "Cold Weather Preparation and Operation," and SE-14, "Snow." Documents reviewed for each applicable section of this report are listed in the Attachment. This inspection satisfied two inspection samples for review of risk significant systems.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown (71111.04Q - 4 samples)

a. Inspection Scope

The inspectors performed a partial walkdown of the following four systems to verify the operability of redundant or diverse trains and components when safety equipment was inoperable. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, walked down control systems components, and verified that selected breakers, valves, and support equipment were in the correct

Enclosure

position to support system operation. The inspectors also verified that Exelon had properly identified and resolved equipment mitigation problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program.

- Unit 1 “A” Residual Heat Removal (RHR) System During a Planned “B” RHR Maintenance Outage
- Unit 2 Standby Liquid Control System
- Unit 1 “B” Core Spray System with the Discharge Pipe Keep Fill System Pressure Higher Than Normal
- Unit 1 RCIC System During a Planned HPCI Maintenance Outage

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors conducted one complete walkdown of the Unit 1 core spray (CS) system to verify the functional capability of the system. The inspectors used Exelon procedures and other documents listed in the Attachment to verify proper system alignment. The inspectors also verified electrical power requirements, operator workarounds, labeling, hangers and support installation, procedures and methods used for venting the system, and associated support systems status. The walkdowns also included evaluation of system piping and supports against the following considerations:

- Piping and pipe supports did not show evidence of water hammer
- Oil reservoir levels appeared normal
- Snubbers did not appear to be leaking any hydraulic fluid
- Hangers were functional
- Component foundations were not degraded

The inspectors performed a review of outstanding action requests, issue reports, and work orders to verify that the deficiencies did not significantly affect the CS design function and to verify that Exelon was identifying and appropriately resolving any equipment alignment problems.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Protection - Tours (71111.05Q - 9 samples)

a. Inspection Scope

The inspectors conducted a tour of the nine areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that combustibles and ignition sources were controlled in accordance with Exelon's administrative procedures, fire detection and suppression equipment was available for use, and that passive fire barriers were maintained in good material condition. The inspectors also verified that compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with Exelon's fire plan.

- Unit 2 Reactor Building 177' Elevation During Plant Startup
- Unit 2 Reactor Building 217' Elevation During Plant Startup
- Unit 2 Reactor Building 283' Elevation During Plant Startup
- Unit 1 Core Spray Rooms and 177' Elevation Corridors
- Control Room Ventilation Air Intake Plenum
- Unit 1 Reactor Building 253' Elevation
- Unit 1 D11 Emergency Diesel Fuel Oil Transfer Pump Room
- Main Control Room and Peripheral Rooms
- Control Enclosure Elevations 289' and 304' (Remote Shutdown Panel, Auxiliary Equipment Room, and Control Enclosure Fan Room)

b. Findings

No findings of significance were identified.

.2 Fire Protection - Drill Observation (71111.05A - 1 sample)

a. Inspection Scope

The inspectors observed one unannounced fire drill conducted in the Auxiliary Boiler House on October 7, 2005. The inspectors observed the drill to evaluate the readiness of the plant fire brigade to fight fires. The inspectors verified that Exelon staff identified deficiencies, openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of fire fighting turnout gear and self-contained breathing apparatus (SCBA); (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient fire fighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of fire into other plant areas; (7) smoke removal operations; (8) utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives. The inspectors also evaluated the SCBA program including storage, training, expectations for use, and maintenance.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - external flooding - 1 sample)External Floodinga. Inspection Scope

The inspectors reviewed the design, material condition, and procedures for coping with external flooding as it pertains to the Unit 1 and Unit 2 EDG enclosures. The inspectors reviewed the applicable design documents, including applicable sections of the Updated Final Safety Analysis Report (UFSAR), and station procedures, including Exelon procedure SE-4-3, "Flooding External to the Power Block." The inspectors also performed a walkdown of the applicable areas to ensure that the EDG enclosures would not be affected by the probable maximum flood.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A - 1 sample)a. Inspection Scope

The inspectors observed portions of Exelon's cleaning and inspection of the Unit 2 "C" RHR room cooler to ensure the heat exchanger could perform its design function. The inspectors reviewed the visual inspection, cleaning, and planned heat transfer test. The heat transfer test was postponed because technicians were unable to measure valid cooling flow data. The inspectors reviewed Exelon's basis for deferring the heat transfer test to a later date that was still within the allowed frequency. The inspectors walked down the selected heat exchanger to assess its material condition.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11B - 1 sample & 11Q - 1 sample)

.1 Biennial Review

a. Inspection Scope

The inspectors performed the following activities using NUREG-1021, Rev. 9, "Operator Licensing Examination Standards for Power Reactors," Inspection Procedure Attachment 71111.11, "Licensed Operator Requalification Program," and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)," as acceptance criteria, 10 CFR 55.46 Simulator Rule (sampling basis). Inspectors performed these activities for both units.

The inspectors reviewed documentation of operating history since the last biennial requalification program inspection. Documents reviewed included NRC inspection reports and Exelon Issue Reports (IRs) to ensure that operational events were not indicative of possible training deficiencies. Inspectors reviewed the following IRs to evaluate the need for training involvement: 216396, related to RCIC operability determination review; 220816, related to RCIC trip during HPCI suction swap-over test; 221717, related to D21 emergency diesel running unloaded for excessive time; and 312046, related to conducting core alterations with the source range monitor audible alarm inoperable.

The inspectors reviewed requalification examination material to ensure the quality of these exams met or exceeded the criteria established in the Examination Standards and 10 CFR 55.59. The review included the comprehensive biennial written exams for three weeks, simulator scenarios for both inspection weeks, and job performance measures (JPMs) for the first inspection week.

The inspectors observed the administration of operating examinations to two operating and two staff crews. The inspectors observed the administration of all six simulator scenarios in week one and five of six scenarios in week two. The inspectors also observed one set of five job performance measures (**JPMs**) administered to eight individuals. As part of the examination observation, the inspectors assessed the adequacy of Exelon examination security measures.

The inspectors reviewed a summary of plant events significant to core damage frequency and reviewed facility training and evaluation materials to ensure operator actions required in these events were included in requalification training.

The inspectors assessed remedial training records for the past two years to ensure remediation plans were unique to the individual failures, and that they were timely and effective. The inspectors reviewed remedial training packages for three operators who had failed their last biennial written examination and two individuals who had failed "as found" simulator training evaluations. The review verified that the identified deficiencies were addressed by the remediation followed by an appropriate re-test.

Inspectors verified conformance with operator license conditions by reviewing the following records:

- A sample of attendance records for the current training cycle;
- Six medical records; and
- A sample of proficiency watch-standing records, reactivation records, and license renewal records.

The inspectors observed simulator performance during the conduct of the examinations, and reviewed simulator performance tests and discrepancy reports to verify compliance with the requirements of 10 CFR 55.46. Limerick is committed to the ANSI 3.5-1985 standard. The inspectors reviewed simulator configuration control and performance testing through interviews and the review of: facility simulator procedures; open and closed simulator work requests; and the review of test results. Specific tests inspected are listed in the Attachment.

On November 9, 2005, one inspector conducted an on-site review of licensee requalification exam results. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)." The inspectors verified that:

- Crew failure rate on the dynamic simulator was less than 20%. (Failure rate was 0%.)
- Individual failure rate on the dynamic simulator test was less than or equal to 20%. (Failure rate was 0%.)
- Individual failure rate on the walkthrough test (JPMs) was less than or equal to 20%. (Failure rate was 0%.)
- Individual failure rate on the comprehensive biennial written exam was less than or equal to 20%. (Failure rate was 6.7%.)
- More than 75% of the individuals passed all portions of the exam. (93.2% of the individuals passed all portions of the exam.)

b. Findings

No findings of significance were identified.

.2 Resident Inspector Quarterly Review

a. Inspection Scope

On October 4, 2005, the inspectors observed a medium pipe break loss of coolant accident (LOCA) simulator scenario to assess licensed operator performance and the evaluator's critique. The simulator evaluation was performed during the licensed operator annual examination. The inspectors discussed the results with operators, operations management, and training instructors.

Enclosure

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12 - 3 samples)

a. Inspection Scope

The inspectors reviewed the three samples listed below for items such as: (1) appropriate work practices; (2) identifying and addressing common cause failures; (3) scoping in accordance with 10 CFR 50.65(b) of the maintenance rule (MR); (4) characterizing reliability issues for performance; (5) trending key parameters for condition monitoring; (6) charging unavailability for performance; (7) classification and reclassification in accordance with 10 CFR 50.65 (a)(1) or (a)(2); and (8) appropriateness of performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSCs/functions classified as (a)(1). Items reviewed included the following:

- 2A RHR Test Return Valve Failed to Close, IR 309818
- Unit 2 HPCI Suppression Pool Suction Valve Inoperable, IR 318131
- Unit 2 "C" Condensate Pump Trip, IR 374676

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 7 samples)

a. Inspection Scope

The inspectors reviewed the following seven activities to verify that Exelon performed the appropriate risk assessments prior to removing equipment for work. The inspectors verified that Exelon performed risk assessments as required by 10 CFR 50.65 (a)(4) and were accurate and complete. When Exelon performed emergent work, the inspectors verified that the plant risk was promptly reassessed and managed in accordance with Exelon's risk assessment tool and risk categories.

- Unit 2 Loss of Reactor Building Ventilation and Initiation of the Standby Gas Treatment System
- 1C Reactor Feed Pump Trip on Low Suction Pressure, IR 391553
- Partial Loss of Main Control Room Annunciator Panel Audible Alarms, IR 429190
- Unit 2 RHR Drywell Spray Valve Leaks, HV-051-2F016B, Containment Isolation Valve, IR 429141
- Unit 1 Inadvertent Reactor Protection System Half-Scram During Instrumentation and Control testing, IR 429654
- Loss of T-10 Offsite Power Transformer, IR 432427

- ST-2-042-644-2, "Reactor Vessel Pressure - High," Test Stopped due to Unexpected Voltage Readings, AR A1544421

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 7 samples)

a. Inspection Scope

For the seven operability evaluations listed below, the inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification (TS) operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) to verify that the system or component remained available to perform its intended function. In addition, the inspectors reviewed the compensatory measures implemented to verify that the compensatory measures worked as stated and were adequately controlled. The inspectors also reviewed a sampling of issue reports to verify that Exelon was identifying and correcting any deficiencies associated with operability evaluations.

- 1A Residual Heat Removal Pump Minimum Flow Data Method Ineffective, IR 382911
- D22 Emergency Diesel Generator Exhaust Smoke After the Diesel Was Secured, IR 398359
- 1B Core Spray System Pressure Exceeded the Normal 150 psig Keepfill Pressure, IR 399530
- Emergency Service Water Throttle Valve at an Incorrect Position, IR 430240
- Core Spray Low Pressure, IRs 338207 and 366116
- D24 Damaged Piston Rings in Number 8 Cylinder, IR 433194
- Unit 1 and Unit 2 RCIC Steam Admission Valve (HV-F045) Analysis Changed, IR 435534

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16 - 1 sample)

a. Inspection Scope

The inspectors reviewed the most significant control room deficiencies, equipment trouble tags, and selected issue reports to determine whether or not these items could affect the reliability, availability, and potential for mis-operation of a mitigating system; affect multiple mitigating systems; or affect the ability of operators to respond in a correct and timely manner to plant transients and accidents. The inspectors also

assessed whether Exelon identified and entered operator workarounds into their corrective action program at an appropriate threshold. The following work around was reviewed:

- Multiple Issue Reports on the Unit 1 and Unit 2 Generator Hydrogen and Stator Winding Cooling Control Panels

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19 - 6 samples)

a. Inspection Scope

The inspectors reviewed the six post-maintenance tests listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed Exelon's test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed the test data to verify that the test results adequately demonstrated the restoration of the affected safety functions.

- ST-6-092-313-1, D13 EDG Run Following Routine Maintenance on the EDG Ventilation Air Exhaust
- ST-6-051-231-2, 'A' RHR Pump, Valve, and Flow Test Following an RHR Maintenance Outage
- S94.9.A, "Routine Inspection of 1B RPS UPS Static Inverter," After Maintenance
- ST-2-057-403-1, "Unit 1 Accident Monitoring Suppression Pool Oxygen and Hydrogen Concentration Analyzer Test," After Component Replacement
- RT-6-092-314-2, "D24 Emergency Diesel Initial Startup and Synchronization to the Electrical Grid" After a Major Overhaul
- ST-6-055-230-1, "Unit 1 HPCI Pump, Valve, and Flow Test" After Planned Maintenance on the Electronic Governor Module (EGM)

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20 - 1 sample)a. Inspection Scope

The inspectors evaluated activities associated with the forced outage that occurred as a result of the Unit 2 scram due to issues with the electrohydraulic control (EHC) system. From October 12 - 19, 2005, the inspectors monitored the activities listed below. The inspectors also observed portions of the reactor startup during recovery.

- Limerick's forced outage plan, including appropriate consideration of risk, industry experience, and previous site-specific problems
- Plant Operations Review Committee and Outage Control Center meetings
- EHC system repair activities and emergent work associated with the 'B' pressure regulator
- Reactor startup and ascension to full power operation

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 7 samples)a. Inspection Scope

The inspectors witnessed the six surveillance tests and reviewed the test data of selected risk-significant SSCs listed below to assess, as appropriate, whether the SSCs met the requirements of the Technical Specifications and the UFSAR. The inspectors also determined whether the testing effectively demonstrated that the SSCs were operationally ready and capable of performing their intended safety functions.

- ST-6-051-233-2, "Unit 2 'C' RHR Pump, Valve, and Flow Test"
- ST-6-092-321-2, "D21 Diesel Generator LOCA/Load Reject Testing and Fast Start Operability Run"
- ST-6-092-315-1, "D11 Diesel Generator Fast Start Operability Test Run"
- ST-6-107-590-2, "Daily Surveillance Log and Reactor Coolant Leak Rate Verification"
- ST-6-020-231-1, "D11 Diesel Generator Fuel Oil Transfer Pump Valve and Flow Test"
- ST-6-055-230-2, "HPCI Pump, Valve, and Flow Test"
- ST-2-042-934-1, "RPS and NSSSS - Reactor Vessel Water Level - Low, Level 3; Division IIA, Channel C Response Time Test"

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23 - 3 samples)

a. Inspection Scope

The inspectors reviewed the three temporary modifications listed below and the associated 10 CFR 50.59 screenings, and compared each against the UFSAR and Technical Specifications to verify that the modification did not affect operability or availability of the affected system. The inspectors ensured that each modification was in accordance with the modification documents and reviewed post-installation and removal testing to verify that Exelon adequately verified the actual impact on permanent systems by the tests.

- Jumper Installation for Recirculation Pump Motor Generator Set Oil Pump Swap On-Line
- Temporary Leak Repair on 2B Motor Generator Set Oil Cooler
- Installation of Vibration Monitoring Equipment on Unit 2 RHR Shutdown Cooling Injection Line Valves

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 - 1 sample)

a. Inspection Scope

The inspectors evaluated the licensed operators' emergency response to a simulated plant transient on October 4, 2005. The simulated plant event was a medium break loss of coolant accident and associated Alert Emergency Classification. The inspectors reviewed the scenario to identify the timing and location of classification and notification activities. During the drill and exercise, the inspectors reviewed checklists and forms used for classification and notification activities, and compared them to the criteria in Exelon's Emergency Plan, EP-AA-1000, and supporting procedures.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01 - 11 samples)

a. Inspection Scope

Radioactive Effluent Treatment and Monitoring Systems. During the period of November 14-17, 2005, the inspector conducted the following activities to verify that Exelon was properly maintaining the gaseous and liquid effluent processing systems to ensure that radiological releases were properly mitigated, monitored, and evaluated with respect to public exposure. Implementation of these controls was reviewed against the criteria contained in 10 CFR Parts 20 and 50, Exelon's Offsite Dose Calculation Manual (ODCM), and Exelon procedures. Documents reviewed are listed in the Attachment.

- The inspector reviewed the 2004 Annual Radiological Effluent Release Report to verify that the effluents program was implemented as required by the ODCM.
- The inspector walked down the major components of the Unit 1 and Unit 2 gaseous and liquid release monitoring systems, with the cognizant system manager, to verify that the system configuration complied with the FSAR descriptions, and to evaluate equipment material condition. The inspector also reviewed the completed surveillance test (ST) procedure associated with each monitor to demonstrate instrument operability. Effluent monitors examined and ST's reviewed included:

Unit 1:

South Stack Radiation Monitor (RY-026-185A/B), ST-1-026-400-1

Unit 2:

South Stack Radiation Monitor (RY-026-285A/B), ST - 2-026-400-2

Units 1 & 2:

North Stack Radiation Monitor (RY-026 -075A & B), ST-2-026-414-0

Wide Range North Stack Monitor (RY- 026- 076), ST-2-026-438-0

Liquid Effluent Radiation Monitor (RE-026-087A & B), ST-2-063-400-0

RHR Service Water Monitors (RE-026-022A & B), ST-2-012-404-0

- The inspector reviewed the Surveillance Test procedures and observed technicians collecting weekly air particulate filter and iodine cartridge samples. Airborne particulate and iodine samples were taken from the North Stack monitors (ST-5-076-815-0), South Stack monitors (ST-5-076-815-1&2), and Wide Range Gas monitor (WRGM) (ST-5-076-815-0).

Enclosure

- The inspector reviewed the air cleaning surveillance test results for the HEPA and charcoal filtration systems installed in Units 1 and 2. Systems reviewed included the A & B Standby Gas Treatment Systems, A & B Control Room Emergency Fresh Air Systems, and the A & B Reactor Enclosure Recirculation Systems. The inspector confirmed that the air flow rates were consistent with the UFSAR values.
- The inspector reviewed the most current liquid and gaseous effluent monitor functional test results and calibration records to verify that the associated isolation functions and alarms were operable. The inspector evaluated the effluent radiation monitor setpoints for agreement with the ODCM requirements.
- The inspector evaluated the preparation of a liquid effluent discharge permit for releasing a Floor Drain Sample Tank by discussing the associated procedures with the radwaste technician. Procedures discussed included the "RadWaste Discharge Permit" (ST-5-061-570-0), "Radwaste Discharges" (CY-LG-170-101), and "Obtaining Samples From the Radwaste Enclosure Sample Station" (CY-LG-120-113).
- The inspector reviewed the administrative changes made to the ODCM in 2004 to determine if the changes affected the licensee's ability to maintain doses as low as is reasonably achievable.
- The inspector reviewed liquid and gaseous effluent monthly, quarterly, and annual dose calculations for calendar year 2004 through October 2005 to ensure that the licensee properly calculated the offsite dose from effluent releases, in accordance with the ODCM, and to determine if any performance indicator (criteria contained in Appendix I of 10 CFR 50) was exceeded.
- The inspector reviewed the calibration records and quality control records for laboratory counting instrumentation (Gamma Detectors Nos. 1, 2, 3, and 4, and a liquid scintillation detector) used to characterize and quantify effluent samples.
- The inspector reviewed the results of the licensee's inter-laboratory (cross check) comparison program to verify the accuracy of effluent sample analyses performed by the licensee.
- The inspector reviewed and discussed with the licensee the validation and verification (V&V) results for the effluent software (EDDAS) to ensure the software in use provides accurate dose calculations.

Problem Identification and Resolution. The inspector reviewed relevant Issue Reports, an Effluents Control Program self-assessment (LS-AA-126-1005), and an effluents program audit exit meeting summary (NOSA-LIM-05-08) to evaluate Exelon's effectiveness in identifying, evaluating, and resolving effluent control issues. This review was conducted against the criteria contained in 10 CFR 20, Technical Specifications, and Exelon procedures.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP) (71122.03)a. Inspection Scope (1 sample)

During the period of November 14-17, 2005, the inspector conducted the following activities to verify that Exelon implemented the radiological environmental monitoring program (REMP) consistent with the site Technical Specifications and the Off-site Dose Calculation Manual (ODCM) to validate that radioactive effluent releases met the design objectives of Appendix I to 10 CFR 50. Documents reviewed are listed in the Attachment.

- The inspector reviewed the 2004 Annual Radiological Environmental Operating Report to determine if the monitoring program was implemented as required by the ODCM.
- The inspector reviewed issue reports related to the REMP program and an Nuclear Oversight Department exit meeting summary for a REMP audit (NOSA-LIM-05-08) completed on November 11, 2005 to evaluate the effectiveness of the licensee's corrective action program in identifying and resolving relevant environmental issues.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES4OA1 Performance Indicator (PI) Verification (71151 - 2 samples)a. Inspection ScopeCornerstone: Occupational Radiation Safety

- Occupational Exposure Control Effectiveness

The inspector reviewed implementation of Exelon's Occupational Exposure Control Effectiveness Performance Indicator (PI) Program. Specifically, the inspector reviewed issue reports, and associated documents, for occurrences involving locked high radiation areas, very high radiation areas, and unplanned exposures against the criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 2, to verify that all occurrences that met the NEI criteria were identified and reported as performance indicators. This inspection activity

represents the completion of one (1) sample relative to this inspection area, completing the annual inspection requirement.

Cornerstone: Public Radiation Safety

- RETS/ODCM Radiological Effluent Occurrences

The inspector reviewed relevant effluent release reports for the period January 1, 2004 through October 31, 2005, for issues related to the public radiation safety performance indicator, which measures radiological effluent release occurrences that exceed 1.5 mrem/qtr whole body or 5.0 mrem/qtr organ dose for liquid effluents; 5mrads/qtr gamma air dose, 10 mrad/qtr beta air dose, and 7.5 mrads/qtr for organ dose for gaseous effluents. This inspection activity represents the completion of one (1) sample relative to this inspection area, completing the annual inspection requirement.

The inspector reviewed the following documents to ensure Exelon met all requirements of the performance indicator from the first quarter 2004 to the third quarter 2005:

- monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases;
- quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases; and
- dose assessment procedures.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

.1 Review of Items Entered into the Corrective Action Program

As required by inspection procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed screening of all items entered into Exelon's corrective action program. Inspectors accomplished this by reviewing the description of each new issue report and evaluating the issue reports against the requirements of LS-AA-125, "Corrective Action Program (CAP) Procedure," and 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action."

.2 Semi-Annual Review to Identify Trends

a. Inspection Scope

As required by inspection procedure 71152, "Identification and Resolution of Problems," the inspectors performed a review of Exelon's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspector's review was focused on repetitive equipment and corrective maintenance issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.1. The review also included issues documented outside of the normal CAP in system health reports, corrective maintenance work orders, component status reports, site monthly meeting reports, and maintenance rule assessments. The inspector's review nominally considered the six-month period of June through December 2005. The inspector compared and contrasted their results with the results contained in Exelon's latest integrated quality assessment report. Inspectors also reviewed corrective actions associated with a sample of the issues identified in Exelon's trend report for adequacy.

b. Assessment and Observations

No findings of significance were identified.

.3 Annual Sample Review (71152 - 2 samples)

Unit 1 Scram Due to Invalid Actuation of Main Generator Lockout Relay

a. Inspection Scope

The inspectors reviewed the root cause report and corrective actions related to the Unit 1 automatic reactor shutdown on July 18, 2005. The inspectors reviewed several action requests (ARs) related to the event. The inspectors reviewed Exelon's responses to the ARs to ensure that the full extent of the issues were identified, appropriate evaluations were performed, and appropriate corrective actions were specified and prioritized. The inspectors walked down affected areas of the plant and interviewed station personnel. The inspectors evaluated Exelon's responses to the ARs against the requirements of the corrective action program.

b. Findings and Observations

No findings of significance were identified. Exelon took timely action in response to this event. The prompt investigation report was thorough and both the short term and long term corrective actions that resulted were appropriate. Time lines for completing the actions were reasonable.

Incorrect Value for Drywell Radiation Monitor in Emergency Action Level Matrix

a. Inspection Scope

The inspectors reviewed the root cause report, a technical evaluation, and corrective actions pertaining to the determination of an incorrect value for the drywell radiation monitor in the fission product barrier emergency action level (EAL) matrix. This inspection was conducted according to NRC Inspection Procedure 71152 and the applicable planning standards, 10 CFR 50.47(b) and requirements of 10 CFR 50 Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities."

b. Findings and Observations

After identification, Exelon took prompt action to address this issue. The root cause report was thorough, provided detail into the history surrounding the original problem, and why it was undetected for about ten years. Exelon's extent of condition was fleet-wide in that all numerical values in the EALs and their bases were reviewed for accuracy. Exelon's technical report provided an accurate perspective on the significance of this issue. Additional details regarding this issue are documented in Section 4OA7, "Licensee-Identified Violations."

4OA3 Event Followup (71153)

(Closed) LER 05000352/1-05-003, Reactor Scram Due to Invalid Actuation of Main Generator Lockout Relay

On July 18, 2005, a valid automatic actuation of the reactor protection system was initiated by a main turbine trip that was caused by an invalid main generator lockout relay actuation. A corroded disconnect position switch and concurrent ground on the balance of plant DC power distribution system caused the main generator output breaker position monitoring circuit to falsely sense that both main generator output breakers were open. Exelon repaired the corroded switch and ground and the unit was restarted. The inspector reviewed the LER and no findings of significance were identified. Exelon documented the issue in IR 354285. The corrective actions taken in IR 354285 were reviewed by the inspectors in section 4OA2 above. This LER is closed.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On **January 13, 2006**, the resident inspectors presented the inspection results to Mr. DeGregorio and other members of his staff, who acknowledged the finding. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

4OA7 Licensee-Identified Violations

The following finding of very low safety significance (Green) was identified by Exelon and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as a non-cited violation.

10 CFR 50.54(q) requires that licensee follow their emergency plans. Section 3 of the Limerick Generating Station Emergency Plan Annex, Classification of Emergencies, states that emergency action level values are based upon criteria established under Revision 2 to NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels." NUMARC/NESP-007 directs licensees to use site-specific values for containment radiation levels to determine the loss or potential loss of the fuel cladding and the containment barriers, respectively. To do this, the licensee developed a family of curves that plotted drywell radiation levels as a function of time for various degrees of fuel (and cladding) damage. The licensee identified that the values developed (in the mid-1990s) for the drywell radiation monitor for these two fission product barriers were incorrect. Although the family of curves was appropriately calculated, the wrong curve was used to obtain the drywell radiation monitor values which resulted in the drywell radiation monitor values being 10 times higher than they should have been. Upon discovery of this error, the licensee took immediate action to correct the drywell radiation monitor value and issued action tracking item 376267 which initiated a root cause investigation, a technical evaluation, and other associated corrective actions which included a fleet-wide review of EAL numerical values and their bases. The inspector determined that the error associated with this EAL parameter to be of very low safety significance because it would not have delayed the declaration of any emergency due to redundant EALs, based upon core level, that would be exceeded prior to the drywell radiation monitor reaching its stated threshold. For the minority of postulated events that would not be preceded by a low reactor vessel level condition, the inspectors credited existing emergency operating procedures to mitigate the event conditions.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Exelon Generation Company

R. DeGregorio, Site Vice President
C. Mudrick, Plant Manager
P. Cowan, Director of Licensing and Regulatory Affairs
J. Karkoska, Mid-Atlantic EP Manager
P. Orphanos, Director, Operations
R. Kreider, Director, Regulatory Assurance
J. White, Director, Training
E. Callan, Director, Engineering
D. Hamilton, Manager, Nuclear Oversight
P. Chase, Shift Operations Superintendent
C. Rich, Manager, Operations Training
T. Tierney, Manager, Chemistry
E. Kelly, Engineering Programs Manager
M. Wyatt, Operations Training
F. Burzynski, Station Fire Marshall
P. Tarpinian, PRA Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

Closed

05000352/1-05-003	LER	Reactor Scram Due to Invalid Actuation of Main Generator Lockout Relay
-------------------	-----	--

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

S08.8.A, "RWST, #1 and #2 CST Freeze Protection," Revision 7
GP-7, "Cold Weather Preparation and Operation," Revision 27
SE-14, "Snow," Revision 13
RT-6-100-005-1, "Unit 1 Diesel Generator Heat Trace Operability Test," Revision 4
RT-6-100-005-2, "Unit 2 Diesel Generator Heat Trace Operability Test," Revision 4

Section 1R04: Equipment Alignment

Partial Walkdowns

LGS UFSAR 7.4.1.2, "Standby Liquid Control System - Instrumentation and Controls"
LGS UFSAR 7.4.2.2, "Standby Liquid Control System - Instrumentation and Controls"
LGS UFSAR 9.3.5, "Standby Liquid Control System"
LGS UFSAR 15.8, "Anticipated Transients Without Scram"
T-212, "Bypassing Squib Valves for SLC Injection", Revision 14
S48.9.A, "Routine Inspection of Standby Liquid Control System"
IR 288919, "Water Found in '1A' RHR PP Suction Pit"
IR 393854, "Standing Water in '1A' RHR Pump Pit"
P&ID 8031-M-51, Sheet 1, "Residual Heat Removal (Unit 1)," Revision 61
P&ID 8031-M-51, Sheet 2, "Residual Heat Removal (Unit 1)," Revision 63
Operator Logs, dated 11/07/2005 through 11/08/2005

Complete System Walkdown

P&ID 8031-M-52, Sheet 1, "Core Spray (Unit 1)," Revision 47
P&ID 8031-M-52, Sheet 2, "Core Spray (Unit 1)," Revision 42
ST-6-052-231-1, "A Loop Core Spray Pump, Valve, and Flow Test," Revision 60
IST Program Specification ML-008, Appendix E, "Core Spray System," Revision 7
L-S-44, "Core Spray Design Basis Document," Revision 10, Sections 3.1, 3.2, 3.3, and 4.0
A1046507, "1A Core Spray Vent Line"
ECR 96-03220, "1A Core Spray Vent Line"
IR 308696, "ST-4-LLR-084-2 Isolated Condensate Transfer to 2A Core Spray"
IR 362675, "HV-011-101G Exceeded Max Allowable Stroke Time"
IR 385909, "PI-052-2R001C Core Spray Suction Gauge Reads High"
IR 399530, "Possible HV-052-1F037 Leak By"
IR 428720, "Revise Procedures to Vent Core Spray"
S52.4.B, "1A Core Spray Venting," Revision 6
Operator Logs, Dated 10/19/05 - 10/20/05
Core Spray Maintenance Rule Scope and Performance Monitoring
System Health Overview Report, "CS, Safeguard Pipe Fill, SPCU," September 2005

Section 1R05: Fire Protection

Tours

LGS UFSAR, Section 9A
F-A-533, "Control Room 533 and Peripheral Rooms 530 to 535 (EL. 269) Fire Area 24,"
Revision 8
F-A-540, "Remote Shutdown Panel Room 540 (EL. 289) Fire Area 26," Revision 8
F-A-542, "Auxiliary Equipment Room 542 (EL. 289) Fire Area 25," Revision 10
F-A-619, "Control Structure Fan Room (EL. 304) Fire Area 27," Revision 5
F-R-111, "Unit 1 Corridor 111 (EL. 177) Fire Area 40," Revision 6
F-R-110, "Unit 1 Core Spray Pump Room A (EL. 177) Fire Area 35," Revision 5
F-R-117, "Unit 1 Core Spray Pump Room B (EL. 177) Fire Area 38," Revision 6
F-R-113, "Unit 1 Core Spray Pump Room C (EL. 177) Fire Area 36," Revision 5

F-R-114, "Unit 1 Core Spray Pump Room D (EL. 177) Fire Area 37," Revision 7
F-R-402, "Unit 1 CRD Equipment and Neutron Monitoring Areas, Rooms 402, 403, 404, and 406 (EL. 253) Fire Area 45," Revision 12
CC-AA-211, "Fire Protection Program," Revision 2
OP-MA-201-007, "Fire Protection System Impairment Control," Revision 3
IR 359971, "PT Board Terminal Strip TB1-4 Screw Threads Degraded"
IR 360027, "Smoke Detector LED Did Not Illuminate"
IR 428480, "Door 466 Latching Issue"
IR 430721, "Pilot Lamp Burned Out (0H-R602)"
IR 435068, "Halon Extinguisher Low Charge"
A1465465, "F-177 Fire Alarm Pull Station Not Functioning"

Drill Observation

ST-6-022-551-0, "Fire Drill," Revision 6, conducted on 10/07/2005
OP-AA-201-003, "Fire Drill Performance," Revision 6
CC-AA-211, "Fire Protection Program," Revision 2
RP-LG-441-1001, "Respiratory Field Use and Air Testing," Revision 3
RP-LG-825-1001, "Inspection of Respiratory Protection Equipment," Revision 4
F-F-800, "Auxiliary Boiler House (Room 800), Lube Oil Storage (Room 801), and ISI Calibration Equipment Storage (Room 802) Pre-Fire Plan," Revision 2

Section 1R06: Flood Protection Measures

SE-4-3, "Flooding External to the Power Block," Revision 3
LGS UFSAR 2.4.2.2, "Flood Design Considerations"
LGS UFSAR 2.4.2.3, "Effects of Local Intense Precipitation"
LGS UFSAR 2.4.3.5, "Water Level Determinations"
LGS UFSAR 2.4.4, "Potential Dam Failures, Seismically Induced"
LGS UFSAR 2.4.8.2.1, "Design Basis Flood Level"
ARC-MCR-222 D3, "D22 D-G Room Flood," Revision 0
Design Basis Document L-T-07, "External Hazards," Revision 1
Design Basis Document L-T-01, "Structural," Revision 5

Section 1R07: Heat Sink Performance

RT-2-011-392-2, "2CV210 RHR Room Cooler Air to Water Heat Transfer Test," Revision 3
IR No. 394578, "Could Not Perform Pre-Clean Heat Transfer Test"
Maintenance Procedure M-200-037, "Q Listed HVAC Heating and Cooling Coil Clean/Flush"
Work Order No. R0943632, "2CV210 RHR Room Cooler Clean and Inspect"

Section 1R11: Licensed Operator Requalification

Biennial Review

List of open Simulator Work Requests
Plant Transient Review Checklist PTR40605
TQ-AA-301, "Simulator Configuration Management," Revision 6
TQ-AA-302, "Simulator Testing and Documentation," Revision 6

TQ-AA-106-0304, "Licensed Operator Requalification Training Exam Development Job Aid," Revision 5
TQ-AA-106-0305, "Licensed Operator Requalification Training Exam Administration Job Aid," Revision 3
TQ-AA-106-0118, "Licensed Operator Requalification Training Exam Bank Question Submittal/Validation/Review Form," Revision 0
Simulator Testing Review Board 2004-06 Meeting Minutes
Simulator Testing Procedure TQ-AA-302-0101 specific tests:
1.12 : Simulator/Reference Plant Critical Parameters Comparison (44.1%,64%, and 100% 11/8/2004
7.03: Transient Performance Test - Trip of All Feedwater Pumps 8/7/2004
7.03: Transient Performance Test - Closure of All MSIVs 8/15/2004
7.05: Transient Performance Test - Single Recirc Pump Trip 11/7/2004
7.10: Transient Performance Test - Closure of All MSIVs, Stuck Open SRV, Loss of All Feedwater 8/08/2004
3-MCV003: Malfunction Test - RWCU Pump A Cavitate 10/4/03
3-MAD137B: Malfunction Test - SRV 13A Sticks Open 2/9/03
5.05 Malfunction Test - Total Loss of Instrument Air 9/21/03
5.13B Malfunction Test - Main Condenser Air Leak at High Severity 3/2/03
5.34B Malfunction Test - Turbine Trip with ATWS 4/7/2001
5.35D Malfunction Test - Turbine Trip with Failure of Bypass Valves to Open 4/1/01

Section 1R12: Maintenance Effectiveness

A1531328, "2C Condensate Pump Trip Due to Motor Overcurrent"
IR 374676, "2C Condensate Pump Trip Due to Motor Overcurrent"
ER-AA-310, "Implementation of the Maintenance Rule," Revision 4
ER-LG-310-1010, "Maintenance Rule Implementation - Limerick Generating Station," Revision 3
ER-AA-310-1004, "Maintenance Rule - Performance Monitoring," Revision 3
ER-AA-310-1005, "Maintenance Rule - Dispositioning Between (a)(1) and (a)(2)," Revision 2
LGS Maintenance Rule Scope and Performance Monitoring - Condensate System Operator Logs Dated 9/18/2005

Section 1R13: Maintenance Risk Assessment and Emergent Work Evaluation

ON-122, "Loss of Main Control Room Annunciators," Revision 14
IR 391553, "Plant Transient During Performing C0209975-02"
Prompt Investigation Report "1C Reactor Feed Pump Trip on Low Suction Pressure"
Operator Logs dated 10/28/05

Section 1R15: Operability Evaluations

A1503250, "HV-052-1F037 CS 'B' Header Inboard Discharge Valve Leaks By"
A1517520, "Condensate Transfer to '2A' CS Header Check Valves Sticking"
IR 338207, "Condensate Transfer to '2A' CS Header Check Valves Sticking"
IR 366116, "052-2F003A or 052-2F003C Suspected of Not Seating"

IR 399530, "Possible HV-052-1F037 Leak By"
LGS UFSAR 6.3.2.2.3, "Core Spray System"
E-21-1020-G-001, "Core Spray Process Diagram," Revision 8
LS-AA-105, "Operability Determinations," Revision 1

Section 1R16: Operator Workarounds

IR 274931, "10-C120 Differential Seal Oil Low Pressure Alarm"
IR 304834, "Machine Gas Hi/Lo Pressure Alarms with "Normal" Pressure"
IR 321579, "PDI-028-203 Trending Below 10 IN H2O"
IR 321603, "PI-M2-203 Reading 126 PSIG"
IR 323463, "Conductivity Value Unstable and Inaccurate"
IR 345573, "20-C120 Alarm Horn Does Not Sound"
IR 394690, "Machine Gas Purity Low Spuriously Alarming on 10-C120"
IR 422550, "Several IR's on Panel"
IR 425556, "Several IR's on 10-C120 Panel"
A1350074, "Spurious Alarm on 10-C120 Panel"
A1426432, "Unit 1 Gen Gas High Temp Alarm in Below Setpoint"
A1520672, "20-C120 Alarm Horn Does Not Sound"
OP-AA-102-103, "Operator Work-Around Program," Revision 1
LLOT 0620, "Hydrogen Seal Oil," Revision 13
LLOT 0630, "Stator Water Cooling System," Revision 18

Section 1R19: Post Maintenance Testing

ST-6-092-313-1, "D13 Diesel Generator Slow Start Operability Test Run," Revision 69, completed 10/18/2005
IR 262831, "D13 Speed Indication"
IR 387500, "Unsat ST"
IR 387439, "D13 Fan 1G-V512 Running with Temperature Less Than 95 Degrees"
IR 396980, "Alarms Received During RHR PV&F Test Not Identified in ST"
A1461268, "D/G Speed Higher than Band (D13)"
ST-6-051-231-2, "A RHR Pump, Valve, and Flow Test," Revision 47, completed 10/25/2005
ARC-MCR-213 G2, "Loop A RHR Line High Point Vent Low Level," Revision 2
ARC-MCR-213 F3, "2A RHR Pump Discharge Pressure Hi/Lo Pressure," Revision 1
ARC-MCR-213 F5, "Div 1 LPCI Line High Point Vent Low Level," Revision 2
Operator Logs dated 10/25/2005

Section 1R20: Refueling and Other Outage Activities

IR 385399, "GP-18 Review - Unit 2 Scram October 12, 2005 - 2F34"
GP-18, "Scram/ATWS Event Review," Revision 45
Licensed Operator Training Lesson Plan 0590, "EHC System Logic," Revision 10
Operator Logs, dated 10/12/2005 through 10/19/2005

Section 1R22: Surveillance Testing

IR 368273, "Lube Oil Pressure > Max Expected"
 IR 390598, "D21 Voltmeter Selector Switch Not Indicating Properly"
 IR 390292, "Consider Combining LOCA/Load Reject with Governor PMT Test"
 A1398676, "D11 DG Engine Lube Oil Suction PP Discharge Lube Oil Temperature"
 S92.2.N, "Shutdown of the Diesel Generators," Revision 23
 R1008615, ST-6-055-230-2, performed 12-21-2005
 R1015363, RT-055-340-2, performed 12-14-2005
 S55.9.A, performed 12-21-2005
 ST-2-055-810-2, revision 10, "HPCI System Response Time Testing"
 ST-6-055-230-2, revision 51, "HPCI Pump, Valve, and Flow Test"
 ST-6-055-321-2, revision 14, "HPCI Operability Verification"
 RT-6-055-340-2, revision 6, "HPCI Turbine Hydraulic Control System Operability Check"
 S55.1.A, revision 30, "Normal HPCI Line-Up for Automatic Operation"
 S55.9.A, revision 32, "Routine Inspection of HPCI System"
 Specification P300, revision 44, pages 34-35, "Piping Line Class Tables"

NRC Information Notice 96-24, "Pre-conditioning of Case Circuit Breakers before Surveillance"
 NRC Information Notice 97-16, "Pre-conditioning before ASME Inservice Testing"
 NRC IMC Part 9900, "Pre-conditioning before Determining Operability"
 GE Service Information Letter No. 336, revision 1, "Surveillance Testing for HPCI"

Section 1R23: Temporary Plant Modifications

ECR 05-00147, "Vibration Monitoring on HV-51-2F050A and HV-51-2F050B"
 IR 311180, "Vibration Monitoring on HV-51-2F050A and HV-51-2F050B"
 IR 382269, "Expansion Joint Oil Leak at 2B MG Set Lube Oil Cooler"
 A1407482, "Install Vibration Monitoring Equipment on 2A SDC Piping"
 A1506625, "Vibration Monitoring on HV-51-2F050A and HV-51-2F050B"
 A1525539, "Tech Eval for Temporary Configuration Change - MG Lube Oil Pump Jumper"
 A1527399, "2B1 MG Set Lube Oil Pump Vibration/Noise"
 A1534156, "Expansion Joint Oil Leak at 2B MG Set Lube Oil Cooler"
 Work Order C0215323, "Repair Expansion Joint Oil Leak"
 Work Order C0215332, "Replace Expansion Joint XJ-019-272B"
 S43.6.A, "Reactor Recirculation M/G Set Lube Oil Pump Swap," Revision 3
 CC-AA-112, "Temporary Configuration Changes," Revision 10
 CC-AA-102, "Design Input and Configuration Change Impact Screening," Revision 9
 CC-MA-112-1001, "Temporary Configuration Change Packages (TCCP)," Revision 1
 CC-AA-404, "Maintenance Specification: Application Selection, Evaluation, and Control of Temporary Leak Repairs," Revision 7
 CC-AA-404, Attachment 1, "Temporary Leak Repair Permit," completed 10/21/05
 Operator Logs dated 9/29/2005

Section 2PS1: Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

ST-2-026-414-0, "Radioactive Gaseous Effluent Monitoring - North Stack Effluent Monitor Channel A Calibration/Functional Test"

ST-2-026-415-0, "Radioactive Gaseous Effluent Monitoring - North Stack Effluent Monitor Channel B Calibration/Functional Test"

ST-2-026-438-0, "Accident Monitoring North Stack Wide Range Accident Monitor Calibration/Functional Test"

ST-2-026-400-1, "Radioactive Gaseous Effluent Monitoring - South Stack Effluent Monitor Channel A Calibration/Functional Test"

ST-2-026-400-2, "Radioactive Gaseous Effluent Monitoring - South Stack Effluent Monitor Channel A Calibration/Functional Test"

ST-2-012-404-0, "Radiation Monitoring - RHR Service Water Radiation Monitor, Division I, Channel A Calibration/Functional Test"

ST-2-012-405-0, "Radiation Monitoring - RHR Service Water Radiation Monitor, Division I, Channel B Calibration/Functional Test"

ST-2-063-400-0, "Radioactive Liquid Effluent Monitoring - Liquid Radwaste Effluent Line Calibration/Functional Test"

ST-4-076-801-0, "A Standby Gas Treatment System (SBGT) Charcoal Analysis"

ST-4-076-321-0, "A SBGT Charcoal Absorber/HEPA Test"

ST-4-076-802-0, "B SBGT Charcoal Analysis"

ST-4-076-322-0, "B SBGT Charcoal Absorber/HEPA Test"

ST-4-078-801-0, "A Control Room Emergency Fresh Air System (CREFAS) Charcoal Analysis"

ST-4-078-731-0, "A CREFAS Charcoal Absorber/HEPA Test"

ST-4-078-802-0, "B CREFAS Charcoal Analysis"

ST-4-078-732-0, "B CREFAS Charcoal Absorber/HEPA Test"

ST-4-076-806-1, "A Reactor Enclosure Recirculation System (RERS) Charcoal Analysis"

ST-4-076-321-1, "A RERS Charcoal Absorber/HEPA Test"

ST-4-076-807-1, "B RERS Charcoal Analysis"

ST-4-076-806-2, "A RERS Charcoal Analysis"

ST-4-076-321-2, "A RERS Charcoal Absorber/HEPA Test"

ST-4-076-807-2, "B RERS Charcoal Analysis"

ST-4-076-322-2, "B RERS Charcoal Absorber/HEPA Test"

ST-5-061-570-0, "Radwaste Discharge Permit"

ST-5-076-815-0, "North Stack Weekly Iodine and Particulate Analysis"

ST-5-076-815-1, "Unit 1 South Stack Weekly Iodine and Particulate Analysis"

ST-5-076-815-2, "Unit 2 South Stack Weekly Iodine and Particulate Analysis"

CY-LG-170-202, "Sampling of Noble Gas, Tritium, Iodine, and Particulate at the Gaseous Effluent Radiation Monitors"

CY-LG-170-101, "Radwaste Discharges"

CY-LG-120-113, "Obtaining Samples from Radwaste Enclosure Sample Station"

Discharge Permits:

Gaseous Discharges for 11/02/05, 10/05/05, 09/09/05, 08/10/05, 07/06/05, 06/03/05, 05/05/05, 04/08/05, 03/07/05, 02/04/05, 01/10/05, 12/09/04, 11/05/04, 10/07/04, 09/10/04, 08/09/04, 07/09/04, 06/04/04, 05/06/04, 04/06/04, 03/05/04, 02/06/04

Liquid Discharges for 10/13/05, 07/11/05, 04/07/05, 01/06/05, 10/08/04, 07/08/04, 04/07/04, 01/05/04

Issue Reports:

386240, 347258, 353037, 290034, 365113, 397622, 149680, 364307, 393122, 334163, 343003, 353727, 236037, 254629, 263226, 284250, 276696, 312779, 309128, 296214, 315353, 325968

Nuclear Oversight Reports:

LS-AA-126-1005, "Radiological Liquid and Gaseous Effluents Self Assessment"
NOSA-LIM-05-08, "ODCM, REMP, Effluent and Environmental Monitoring Audit Exit Meeting Summary"

Section 2PS3: Radiological Environmental Monitoring Program

Issue Reports :

371443, 363897, 344720, 380375

Section 4OA2: Problem Identification and resolution

IR 336719, "ON-122 Entered Upon Loss of Common Annunciators"
IR 337645, "Repeat Maintenance, OA-S801"
IR 364053, "Limerick Has a Higher Number of Grounds Compared to the Fleet"
IR 354065, "GP-18, Unit 1 Scram"
IR 354285, "Unit 1 Scram Due to Main Generator Lock-out Relay Actuation"
IR 382180, "ST-2-042-934-1 Failed During Performance of Test"
A0404531, "11 Disconnect Switch Clean and Examine"
A0404533, "21 Disconnect Switch Clean and Examine"
A1370138, "Create New or Change PMs"
A1508632, "C71A-K14C-DS2 Light Did Not Go Out"

Miscellaneous

Prompt Investigation Report for IR 354285

Procedures

GP-18, "Scram / ATWS Event Review", Revision 43

LS-AA-125, "Corrective Action Program Procedure", Revision 8
 LS-AA-125-1001, "Root Cause Analysis Manual", Revision 4
 LS-AA-125-1005, "Coding and Analysis Manual", Revision 5
 RT-2-095-900-0, "Location of Battery Grounds", Revision 8

Section 4OA2: Semi-Annual PI&R Trend

IR 365252-04, "Revise RT-6-000-903-0 Step 6.1.1.1"
 IR 351521-02, "Revise ON-122; revise bases document to indicate the alarm horn"
 IR 375066-02, "Revise procedure RT-6-022-304-0"
 IR 369342-02, "Address recommendations in the NRC spent fuel pool study"
 IR 224311-02, "Incorporate drawing into T-229"
 IR 379748-03, "Revise procedure RT-6-000-991-0"
 IR 380572-02, "Revise RHR pump valve and flow test St-6-051-234-1/2"
 IR 302166-03, "Revise GP-3 to include table provided by Reactor Engineering"
 IR 241464-02, "Revise ON-122 as necessary"
 IR 266831-04, "Revise coupling check ST"
 IR 145351-11, "LOCA/LOOP procedure improvement"

Section 4OA7: Licensee-Identified Violations

Root Cause Investigation Report, Action Tracking Item Number 376267
 Evaluation of the Ability to Properly Classify Events due to Errors in Fission Product Barrier Matrix - Limerick Generating Station
 Emergency Plan: Limerick Generating Station Annex, Section 3, Classifications of Emergencies
 Emergency Plan: Limerick Generating Station Annex, EAL Technical Basis

LIST OF ACRONYMS

AR	Action Request
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CS	Core Spray
CST	Condensate Storage Tank
EAL	Emergency Action Level
EDG	Emergency Diesel Generator
EGM	Electronic Governor Module
EHC	Electrohydraulic Control
EP	Emergency Preparedness
HPCI	High Pressure Coolant Injection
HVAC	Heating, Ventilation, and Air Conditioning
IMC	[NRC] Inspection Manual Chapter
IR	Issue Report
IST	In-Service Testing
JPM	Job Performance Measure
LER	Licensee Event Report

LGS	Limerick Generating Station
LOCA	Loss of Coolant Accident
MR	Maintenance Rule
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NSSSS	Nuclear Steam Supply Shutoff System
ODCM	Offsite Dose Calculation Manual
P&ID	Piping and Instrumentation Diagram
PI	Performance Indicator
RCIC	Reactor Core Isolation Cooling
REMP	Radiological Environmental Monitoring Program
R/hr	Rem per Hour
RHR	Residual Heat Removal
RPS	Reactor Protection System
RTP	Rated Thermal Power
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SSC	Structure, System, or Component
ST	Surveillance Test
UFSAR	Updated Final Safety Analysis Report