Limerick 2

Initiating Events

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC
Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001

Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance: G Dec 31, 2000
Identified By: Licensee

Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Barrier Integrity

Significance: W Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002.
Inspection Report# : 2001011*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the

feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance: G Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Emergency Preparedness

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Significance: W Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and

to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Last modified : April 01, 2002

Limerick 2

Initiating Events

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC
Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001

Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance: G Dec 31, 2000
Identified By: Licensee

Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Barrier Integrity

Significance: W Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002.
Inspection Report# : 2001011*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the

feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance: G Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Emergency Preparedness

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Significance: W Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation

Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Last modified : April 01, 2002

Limerick 2

Initiating Events

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC
Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance: G Dec 31, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Barrier Integrity

Significance: W Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002.
Inspection Report# : 2001011*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC

Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance: G Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Emergency Preparedness

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)

Inspection Report# : 2001011*(pdf)*

Significance: W Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Last modified : March 29, 2002

Limerick 2

Initiating Events

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Dec 31, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Dec 29, 2001

Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC
Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation

Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Barrier Integrity

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance: G Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Significance: W Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002.
Inspection Report# : 2001011*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Emergency Preparedness

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Significance: W Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation

Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Last modified : March 28, 2002

Limerick 2

Initiating Events

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance: G Dec 31, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC

Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC
Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test

The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Barrier Integrity

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance: G Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Significance: W Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002.
Inspection Report# : 2001011*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Emergency Preparedness

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Significance: W Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Problem/Issue Cause Analysis

NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Last modified : March 28, 2002

Limerick 2

Initiating Events

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance: G Dec 31, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC

Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Barrier Integrity

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety

significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance:  Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Significance:  Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002.
Inspection Report# : 2001011*(pdf)*

Emergency Preparedness

Significance:  Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Significance:  Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including

operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Last modified : March 27, 2002

Limerick 2

Initiating Events

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance: G Dec 31, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC

Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Barrier Integrity

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety

significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance:  Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Significance:  Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002.
Inspection Report# : 2001011*(pdf)*

Emergency Preparedness

Significance:  Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.

Inspection Report# : 2001016*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and

to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Last modified : March 26, 2002

Limerick 2

Initiating Events

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC
Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its

safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance: G Dec 31, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency

operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Barrier Integrity

Significance: W Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002.
Inspection Report# : 2001011*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance: G Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Emergency Preparedness

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Significance: W Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Last modified : March 01, 2002

Limerick 2

Initiating Events

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Mar 30, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to meet TS 3.0.4 due to change in Operational Conditions with unsatisfactory results on a Unit 1 Division II battery charger surveillance test.
Technical Specification 3.0.4 states that entry into an Operational Condition shall not be made when the conditions for the Limiting Condition for Operation are not met and the associated Action requires a shutdown if they are not met within a specified time interval. Contrary to the above, on or about March 19, 2002, Unit 1 entered Operational Condition 2 (startup), with the Division II DC Battery Charger 1B1D103 inoperable due to an unsatisfactory surveillance test, a condition that requires a shutdown. This item is documented in the licensee corrective action program as CR 100013. This is being treated as a Non-Cited Violation.
Inspection Report# : 2002002*(pdf)*

Significance: G Mar 30, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to meet TS 3.8.2.2 due to unsatisfactory results on a Unit 1 Division II battery charger surveillance test, with two other DC Power Divisions inoperable during a refueling outage
Technical Specification 3.8.2.2 requires that two of the four divisions of DC power be operable in Operational Conditions 4, 5, and *. Contrary to the above, during the period March 14 through March 17, 2002, while in refueling outage 1R09, the Unit 1 DC Power Divisions I, II and III were inoperable concurrently. This condition occurred due to an unsatisfactory surveillance test and lack of supervisory review. This item is documented in the licensee corrective action program as CR 100013. This is being treated as a Non-Cited Violation.
Inspection Report# : 2002002*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC
Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance: G Dec 31, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Barrier Integrity

Significance: W Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002.
Inspection Report# : 2001011*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance: G Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Emergency Preparedness

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Significance: W Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to secure five bags of trash, marked as containing radioactive material and stored in an unrestricted area, from unauthorized removal in accordance with 10 CFR 20.1801
The inspector identified a non-cited violation of 10 CFR 20.1801 having very low safety significance. On March 11, 2002, Exelon failed to prevent five bags of trash, marked as containing radioactive material and stored in an unrestricted area within the protected area, from being transported to the Pottstown Landfill for disposal. The Pottstown Landfill was not licensed under 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," to dispose of radioactive materials. Exelon's failure to prevent the removal of five bags of radioactive material from the protected area to the Pottstown Landfill for disposal was determined to have very low safety significance using the Public Radiation Significance Determination Process. The finding involved radiation material control but not transportation. Public exposure was not greater than 0.005 rem, and there have not been more than 5 instances of such occurrences in the current inspection period. (Section 2PS2)
Inspection Report# : 2002003*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Significance: G May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Transfer of byproduct material to an Agreement State licensee without verifying license authorized receipt of the type, form, and quantity of byproduct material to transferred (10 CFR 30.41(c)).
The inspector identified a non-cited violation of 10 CFR 30.41 having very low safety significance. On December 21, 2001, Exelon transferred byproduct material to General Electric (GE),Wilmington, North Carolina, an Agreement State licensee, without verifying that GE-Wilmington's license authorized receipt of the type, form, and quantity of byproduct material prior to transfer, in accordance with 10 CFR 30.41, "Transfer of byproduct material," section (c). Exelon transferred 1.28 curies of Kr-85 byproduct material in the form of sealed sources to GE-Wilmington licensee that was only authorized to receive sealed sources in the amount of 0.2 curies. The nature of this particular finding is not encompassed by any existing cornerstone or Safety Significance Determination Process, but has been reviewed by NRC management and was determined to be a finding having very low safety significance. The inspector determined that there was no actual safety consequence associated with this condition in that the GE-Wilmington facility was able to appropriately receive, control, repackage, and ship the sealed sources to a licensee authorized to receive such material. (Section 4OA2)
Inspection Report# : 2002003*(pdf)*

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution

Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Last modified : July 22, 2002

Limerick 2

Initiating Events

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to follow station procedures for analyzing degraded main control room indications.
The inspector identified a finding of very low safety significance (Green) that is also a non-cited violation of Technical Specification 6.8.1, "Procedures." Exelon did not assess the operational impact of a degraded '1A' recirculation loop temperature instrument. Consequently, when operators used this degraded temperature instrument to monitor coolant temperature while in a Cold Shutdown condition, the operators did not recognize, due to erroneous temperature indication by the degraded instrument, that the actual reactor coolant temperature had exceeded 200 degrees and resulted in an inadvertent operational condition change to a Hot Shutdown condition. This finding was determined to be of very low safety significance (Green) by the Reactor Inspection Findings for At-Power Situations because it did not increase the likelihood of a primary system LOCA, did not contribute to the likelihood of a reactor trip, and did not increase the likelihood of a fire or internal/external flood.
Inspection Report# : 2002004*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to fully implement station procedure requirements for post-scram reviews.
The inspector identified a non-cited violation of Technical Specification 6.8.1, "Procedures," because Exelon did not follow post scram station procedures during the investigation of the cause of an unexpected high reactor water level condition that led to the trip of all three reactor feedwater pumps following a Unit 1 scram on May 19, 2002. Exelon's post scram review did not identify that the level control setpoint setdown function of the feedwater control system did not actuate which caused the unexpected high reactor water level condition. Exelon's failure to properly investigate the

cause of the reactor high water level condition was determined to have very low safety significance (Green) using a Phase 3 analysis.
Inspection Report# : 2002004*(pdf)*

Significance: G Mar 30, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to meet TS 3.0.4 due to change in Operational Conditions with unsatisfactory results on a Unit 1 Division II battery charger surveillance test.
Technical Specification 3.0.4 states that entry into an Operational Condition shall not be made when the conditions for the Limiting Condition for Operation are not met and the associated Action requires a shutdown if they are not met within a specified time interval. Contrary to the above, on or about March 19, 2002, Unit 1 entered Operational Condition 2 (startup), with the Division II DC Battery Charger 1B1D103 inoperable due to an unsatisfactory surveillance test, a condition that requires a shutdown. This item is documented in the licensee corrective action program as CR 100013. This is being treated as a Non-Cited Violation.
Inspection Report# : 2002002*(pdf)*

Significance: G Mar 30, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to meet TS 3.8.2.2 due to unsatisfactory results on a Unit 1 Division II battery charger surveillance test, with two other DC Power Divisions inoperable during a refueling outage
Technical Specification 3.8.2.2 requires that two of the four divisions of DC power be operable in Operational Conditions 4, 5, and *. Contrary to the above, during the period March 14 through March 17, 2002, while in refueling outage 1R09, the Unit 1 DC Power Divisions I, II and III were inoperable concurrently. This condition occurred due to an unsatisfactory surveillance test and lack of supervisory review. This item is documented in the licensee corrective action program as CR 100013. This is being treated as a Non-Cited Violation.
Inspection Report# : 2002002*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC
Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during

some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee

Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance:  May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance:  Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance:  Dec 31, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance:  Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program

The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Barrier Integrity

Significance: W Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002. In IR 50-353/02-09, documenting the supplemental inspection performed in accordance with Inspection Procedure 95001, the inspector determined that Exelon performed a comprehensive evaluation of the 2N SRV. Exelon's evaluation identified the root causes of the event as being misalignment of the pilot disk during manufacturing and normal vibration amplified by loose discharge flange joints on the 2N SRV. Exelon also identified several contributing causes in the areas of equipment availability and human performance that led to the failure to shutdown the plant prior to the inadvertent lift of the 2N SRV. The completed and planned corrective actions addressed the root and contributing causes identified in the evaluation. Given Exelon's

acceptable performance in addressing the 2N SRV degraded, the White finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program." Implementation of Exelon's corrective actions are subject to future NRC inspection.
Inspection Report# : 2001011*(pdf)*
Inspection Report# : 2002009*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance: G Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Emergency Preparedness

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Significance: W Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC

Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to secure five bags of trash, marked as containing radioactive material and stored in an unrestricted area, from unauthorized removal in accordance with 10 CFR 20.1801
The inspector identified a non-cited violation of 10 CFR 20.1801 having very low safety significance. On March 11, 2002, Exelon failed to prevent five bags of trash, marked as containing radioactive material and stored in an unrestricted area within the protected area, from being transported to the Pottstown Landfill for disposal. The Pottstown Landfill was not licensed under 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," to dispose of radioactive materials. Exelon's failure to prevent the removal of five bags of radioactive material from the protected area to the Pottstown Landfill for disposal was determined to have very low safety significance using the Public Radiation Significance Determination Process. The finding involved radiation material control but not transportation. Public exposure was not greater than 0.005 rem, and there have not been more than 5 instances of such occurrences in the current inspection period. (Section 2PS2)
Inspection Report# : 2002003*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A Jun 26, 2002
Identified By: NRC
Item Type: FIN Finding
Biennial baseline inspection of Problem Identification and Resolution
The team concluded that the implementation of the corrective action program at Limerick Generating Station (LGS) was adequate. The licensee was effective at identifying problems and putting them in the corrective action process.

Issues were prioritized and evaluated appropriately and in a timely fashion. The evaluations of significant problems were of sufficient depth to identify likely root or apparent causes, and to address the potential extent of the circumstances contributing to the problem. Corrective actions that addressed the causes of problems were generally identified and implemented. However, the team identified that some elements of the corrective action program had not been fully effective in resolving component mis-positioning events and errors associated with equipment clearance and tagging. The team also noted that the licensee's oversight committees identified similar findings and that increased management attention has been directed to this area.
Inspection Report# : 2002010*(pdf)*

Significance:  May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Transfer of byproduct material to an Agreement State licensee without verifying license authorized receipt of the type, form, and quantity of byproduct material to transferred (10 CFR 30.41(c)).
The inspector identified a non-cited violation of 10 CFR 30.41 having very low safety significance. On December 21, 2001, Exelon transferred byproduct material to General Electric (GE),Wilmington, North Carolina, an Agreement State licensee, without verifying that GE-Wilmington's license authorized receipt of the type, form, and quantity of byproduct material prior to transfer, in accordance with 10 CFR 30.41, "Transfer of byproduct material," section (c). Exelon transferred 1.28 curies of Kr-85 byproduct material in the form of sealed sources to GE-Wilmington licensee that was only authorized to receive sealed sources in the amount of 0.2 curies. The nature of this particular finding is not encompassed by any existing cornerstone or Safety Significance Determination Process, but has been reviewed by NRC management and was determined to be a finding having very low safety significance. The inspector determined that there was no actual safety consequence associated with this condition in that the GE-Wilmington facility was able to appropriately receive, control, repackage, and ship the sealed sources to a licensee authorized to receive such material. (Section 4OA2)
Inspection Report# : 2002003*(pdf)*

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations.

Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Last modified : August 29, 2002

Limerick 2

Initiating Events

Significance: G Sep 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Main Turbine Retrofit and Associated Change to GP-5, "Steady State Operations"
The inspectors identified a non-cited violation of 10 CFR 50.59, because Exelon staff did not analyze the effect of the increased condensate temperature on all components potentially impacted. Exelon engineering and chemistry personnel did not correctly follow procedures when conducting a 10 CFR 50.59 screening for a change to Procedure GP-5, "Steady State Operations." Consequently, Exelon did not perform a safety evaluation when required. The procedure change contributed to an unplanned reactor shutdown due to degrading condenser vacuum on July 23, 2002. This finding involved a human performance error because engineering and chemistry personnel did not correctly evaluate whether the proposed change affected the Safety Analysis Report. This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process, because although the finding contributed to an unplanned reactor shutdown, it did not affect the availability of mitigation equipment, it did not contribute to the likelihood of a loss of coolant accident initiator, and it did not contribute to the likelihood of a fire or flood event. (Section 1R17)
Inspection Report# : 2002005*(pdf)*

Significance: G Jul 27, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Unit 2 Reactor Level Transient
The inspectors identified a non-cited violation of Technical Specification 6.8.1., "Procedures," because operators failed to follow procedures while placing a reactor feed pump in service, which led to a significant reactor level transient. This finding involved a human performance error because control room operators performed procedural steps out of sequence during a non-routine pump evolution. This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process because it did not contribute to the likelihood of a loss of coolant accident initiator, the unavailability of mitigation equipment, or fire and flooding events. (Section 1R14)
Inspection Report# : 2002005*(pdf)*

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to follow station procedures for analyzing degraded main control room indications.
The inspector identified a finding of very low safety significance (Green) that is also a non-cited violation of Technical Specification 6.8.1, "Procedures." Exelon did not assess the operational impact of a degraded ‘1A' recirculation loop temperature instrument. Consequently, when operators used this degraded temperature instrument to monitor coolant temperature while in a Cold Shutdown condition, the operators did not recognize, due to erroneous temperature indication by the degraded instrument, that the actual reactor coolant temperature had exceeded 200 degrees and resulted in an inadvertent operational condition change to a Hot Shutdown condition. This finding was determined to be of very low safety significance (Green) by the Reactor Inspection Findings for At-Power Situations because it did not increase the likelihood of a primary system LOCA, did not contribute to the likelihood of a reactor trip, and did not increase the likelihood of a fire or internal/external flood.
Inspection Report# : 2002004*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: FIN Finding
Personnel Performance Related to Nonroutine Plant Evolutions and Events
Operators did not conduct a thorough pre-job briefing prior to a non-routine feedwater control system manipulation. Consequently, the operators were not prepared to respond to an unexpected drop in reactor vessel water level in a manner consistent with training and operational transient procedures. The finding was of very low safety significance because an automatic recirculation pump runback occurred which allowed restoration of proper reactor vessel waterlevel prior to exceeding the low reactor vessel water level reactor scram set point. (Section 1R14)
Inspection Report# : 2001004*(pdf)*

Mitigating Systems

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to fully implement station procedure requirements for post-scram reviews.
The inspector identified a non-cited violation of Technical Specification 6.8.1, "Procedures," because Exelon did not follow post scram station procedures during the investigation of the cause of an unexpected high reactor water level condition that led to the trip of all three reactor feedwater pumps following a Unit 1 scram on May 19, 2002. Exelon's post scram review did not identify that the level control setpoint setdown function of the feedwater control system did not actuate which caused the unexpected high reactor water level condition. Exelon's failure to properly investigate the cause of the reactor high water level condition was determined to have very low safety significance (Green) using a Phase 3 analysis.
Inspection Report# : 2002004*(pdf)*

Significance: G Mar 30, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to meet TS 3.0.4 due to change in Operational Conditions with unsatisfactory results on a Unit 1 Division II battery charger surveillance test.
Technical Specification 3.0.4 states that entry into an Operational Condition shall not be made when the conditions for the Limiting Condition for Operation are not met and the associated Action requires a shutdown if they are not met within a specified time interval. Contrary to the above, on or about March 19, 2002, Unit 1 entered Operational Condition 2 (startup), with the Division II DC Battery Charger 1B1D103 inoperable due to an unsatisfactory surveillance test, a condition that requires a shutdown. This item is documented in the licensee corrective action program as CR 100013. This is being treated as a Non-Cited Violation.
Inspection Report# : 2002002*(pdf)*

Significance: G Mar 30, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to meet TS 3.8.2.2 due to unsatisfactory results on a Unit 1 Division II battery charger surveillance test, with two other DC Power Divisions inoperable during a refueling outage
Technical Specification 3.8.2.2 requires that two of the four divisions of DC power be operable in Operational Conditions 4, 5, and *. Contrary to the above, during the period March 14 through March 17, 2002, while in refueling outage 1R09, the Unit 1 DC Power Divisions I, II and III were inoperable concurrently. This condition occurred due to

an unsatisfactory surveillance test and lack of supervisory review. This item is documented in the licensee corrective action program as CR 100013. This is being treated as a Non-Cited Violation.
Inspection Report# : 2002002*(pdf)*

Significance: G Dec 29, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Missed Technical Specification Surveillance Requirement 4.8.1.1.2.b.2 for diesel generator fuel oil storage tanks.
Technical Specification 4.8.1.1.2.b.2 requires that water in the emergency diesel generator fuel oil storage tank be removed every 31 days. On July 11, 2001, the licensee identified water in the D11 and D12 fuel oil storage tanks. The subsequent investigation revealed that during previous surveillance testing, an accumulation of water in the fuel oil storage tanks was not identified and therefore not removed as required. This issue was entered in the licensee's corrective action process as condition report (CR) 61233. (Section 4OA7)
Inspection Report# : 2001012*(pdf)*

Significance: G Nov 10, 2001
Identified By: NRC
Item Type: FIN Finding
Unit 2 standby liquid control system pump relief valve setpoints were too low
The inspector identified that the Unit 2 standby liquid control pump relief valve setpoints were too low such that during some failure to scram scenarios a relief valve could open and divert some standby liquid control flow from the reactor vessel. The finding was of very low risk significance since there was no actual loss of safety function because an operability determination supported by a detailed analysis found that the standby liquid control system would still deliver sufficient flow to meet the injection requirements and thereby mitigate all postulated events. (Section 1R17)
Inspection Report# : 2001011*(pdf)*

Significance: G Sep 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
TS 3.6.6.1 requires restoration of an inoperable containment Hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours
Technical Specification (TS) 3.6.6.1 requires restoration of an inoperable containment hydrogen recombiner within 30 days or be in a hot shutdown within the next 12 hours. This requirement was exceeded in September 2000, when the 2B hydrogen recombiner was in an undetected inoperable condition. A noncompliance with Technical Specifications 3.0.3 and 3.0.4 also occurred as a result of this condition. This violation was reported in LER 2-01-003, and was addressed in the licensee's corrective action program as PEP I0012750. (4OA7)
Inspection Report# : 2001010*(pdf)*

Significance: G Sep 28, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of 10 CFR 50, Appendix B, Criterion III, Design Control Measures for ESW Pump Wetwell Screen
The team identified a Non-cited violation (NCV) of 10 CFR 50, Appendix B Criterion III, for failure to implement adequate design control measures for the emergency service water wetwell screens to verify the adequacy of the design regarding clogging or damage to the screens. This finding was determined to be of very low safety significance (Green) by the Significance Determination Process, Phase 1, because calculations and quarterly pump test results indicated that the screens were not clogged and the emergency service water system was capable of performing its safety function. (Section 1R21)
Inspection Report# : 2001007*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance Risk Assessments and Emergent Work Evaluation - Failure to perform a risk assessment for RCIC test
The inspectors identified a Non-Cited Violation of 10 CFR 50.65 (a)(4) for failure to assess risk prior to performing maintenance activities. Exelon did not assess the risk of performing a Unit 2 reactor core isolation cooling system test concurrent with other scheduled work. This finding was of very low safety significance because Exelon did not perform work on systems that should have been protected while the reactor core isolation cooling system was unavailable, there was no loss of safety function, and the reactor core isolation cooling system was returned to service within the allowed outage time of the technical specifications. (Section 1R13)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow clearance and tagging procedures for 2A safeguard piping fill pump
Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for the activities listed in Appendix A of Regulatory Guide 1.33. The activities include equipment control (e.g., locking and tagging). On or about April 16, 2001, equipment control procedures were not followed, causing the 2A safeguard piping fill pump to be inoperable for the feedwater fill containment leakage mitigation function. (4OA7)
Inspection Report# : 2001005*(pdf)*

Significance: G May 12, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Permanent Plant Modifications
Six of the 2N SRV outlet flange studs were missing or loose, and torque values on outlet flange studs of all other Unit 2 SRVs were found to be substantially below the specified range. Exelon's root cause investigation indicated that the safety relief valve outlet flange studs loosened as a result of use of a gasket that was subject to excessive creep, inadequate torque values, and poor torque value determination guidance. The inspectors identified a violation of 10 CFR 50 Appendix B, Criterion III, "Design Control." This violation is being treated as a non-cited violation consistent with Section VI.A. of the NRC Enforcement Policy. This finding was of very low significance because the SRV outlet flange joint integrity was maintained. (Section 1R17)
Inspection Report# : 2001004*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: FIN Finding
Heat Sink Performance
The inspector identified that the 2A, 2B, and 1A residual heat removal system heat exchangers were not performance tested consistent with commitments to GL 89-13 in that specified testing intervals were exceeded. The finding was of very low significance because although the required performance tests of the RHR heat exchangers were not conducted within the required testing intervals, no actual loss of safety function occurred. (Section 1R07)
Inspection Report# : 2001003*(pdf)*

Significance: G Dec 31, 2000
Identified By: Licensee

Item Type: NCV NonCited Violation
Surveillance Requirements
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. (Section 4OA7)
Inspection Report# : 2000009*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Suppression Pool Cleanup System was not in the Limerick Maintenance Rule Program
The inspector identified that the Unit 1 suppression pool cleanup system, a non-safety related system explicitly used in Limerick's emergency operating procedures, was experiencing performance problems and was not included in the scope of Limerick's Maintenance Rule program as required. This finding affects the Mitigating Systems Cornerstone and is considered to have a very low safety significance as there were other methods to remove excess water inventory from the suppression pool. This issue was a violation of 10 CFR 50.65, paragraph (b)(2) and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Significance: G Sep 30, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Operators Did Not Document an Aux Equipment Room Fan Failure
PECO operators did not follow procedures for identification and resolution of problems and properly document an equipment failure in the "A" auxiliary equipment room ventilation system. As a result, a deficiency in the system was not detected for about six weeks until a subsequent failure occurred. This finding affects the Mitigating Systems Cornerstone and the safety significance of this issue was very low because the auxiliary equipment room ventilation system's redundant fan remained functional thereby maintaining the system available but degraded. This issue was a violation of 10 CFR 50 Appendix B, Criterion V and is being treated as a Non-Cited Violation. (Section 1R12)
Inspection Report# : 2000007*(pdf)*

Barrier Integrity

Significance: W Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Adequate measures were not in place to identify that the 2N Safety/Relief Valve was in a degraded condition in which it was vulnerable to a failure to re-close after lifting
WHITE. The inspectors identified an apparent violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," because adequate measures were not in place to identify that the 2N Safety/Relief Valve (SRV) was in a degraded condition in which it was vulnerable to a failure to re-close after lifting. Engineering personnel did not adequately characterize and evaluate the uncertainties in the 2N SRV pilot valve temperature monitoring plan when they recommended that the action temperature be changed from 497°F to 475°F. The finding is associated with the actual failure of the 2N SRV to re-close after it lifted as operators were reducing power in preparation for an outage to repair the SRV. The SRV was also in a condition, for approximately 81 days, in which the valve was vulnerable to a failure to re-close if it lifted. The finding has low to moderate safety significance because Phase 2 of the significance determination process identified two sequences with low to moderate risk significance. These sequences are: 1) a stuck

open SRV with a failure of containment heat removal and a failure to vent the containment; and 2) a stuck open SRV with a subsequent loss of high pressure injection capability and a failure to depressurize the reactor vessel such that low pressure injection sources could be used for inventory makeup. (Section 1R15) The NRC issued the results of the final significance determination in a letter dated January 11, 2002. In IR 50-353/02-09, documenting the supplemental inspection performed in accordance with Inspection Procedure 95001, the inspector determined that Exelon performed a comprehensive evaluation of the 2N SRV. Exelon's evaluation identified the root causes of the event as being misalignment of the pilot disk during manufacturing and normal vibration amplified by loose discharge flange joints on the 2N SRV. Exelon also identified several contributing causes in the areas of equipment availability and human performance that led to the failure to shutdown the plant prior to the inadvertent lift of the 2N SRV. The completed and planned corrective actions addressed the root and contributing causes identified in the evaluation. Given Exelon's acceptable performance in addressing the 2N SRV degraded, the White finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program." Implementation of Exelon's corrective actions are subject to future NRC inspection.
Inspection Report# : 2001011*(pdf)*
Inspection Report# : 2002009*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Operability Evaluations - Inoperable Safeguard Piping Fill Pumps -- Inadequate surveillance test procedure associated with 2B safeguard piping fill pump
The inspectors identified a finding of very low safety significance (Green) because both Unit 2 safeguard piping fill pumps were inoperable for the feedwater containment leakage mitigation safety function for approximately eight days. The 2B safeguard piping fill pump was inoperable because a surveillance test procedure that required a sampling of oil was inadequate and likely caused a low oil level condition that rendered the pump inoperable. This is a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Procedures." This issue was identified after inspectors questioned a less than adequate operability determination for the 2B pump. During the same time period the 2A safeguard piping fill pump was inoperable because the feedwater fill stop valve in the system was closed rather than open. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: G Jun 30, 2001
Identified By: NRC
Item Type: FIN Finding
Operability Evaluations - Agastat Relays - operability determinations for relay failures
The inspectors identified a finding of very low safety significance (Green) because station personnel did not properly address the operability of an apparent adverse trend of premature relay failures. Operators did not perform a timely re-evaluation of operability when testing information identified a potential common failure mechanism. The subsequent operability review also did not consider several important aspects such as the impact on the containment isolation safety function and the need to shorten some system test intervals. This finding was of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment. (Section 1R15)
Inspection Report# : 2001005*(pdf)*

Significance: SL-IV Dec 31, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Temporary Plant Modifications
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 (RCWU) pump room and the adjacent primary containment isolation valve room. PECO did not evaluate the impact of the

modification on the RCWU isolation logic and on the combustible loading in the area. The results of the violation were assessed as a very low safety significance (green) because the impact of the RWCU isolation function would be minimal and because there was no significant increase in fire severity levels in the area. (Section 1R23)
Inspection Report# : 2000009*(pdf)*

Significance: G Nov 11, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Licensed Operator Requalification
PECO did not properly evaluate the change made to Operational Transient (OT) procedure OT-114, "Inadvertent Opening of a Relief Valve," in May 1996, in accordance with requirements of 10 CFR 50.59. Specifically, PECO did not evaluate whether the delay caused by performing actions to reconfigure electrical busses and reduce recirculation pump flow prior to placing the reactor mode switch to shutdown was consistent with the technical specifications and Updated Final Safety Analysis Report. The issue was considered to be of very low significance because: 1) there was conservatism associated in the design bases analysis and the assumptions for suppression pool heat capacity during this event; 2) the probability of a stuck open SRV with a second event that would challenge containment mitigation capacity is low. Failure to perform a safety evaluation for the changes to OT-114 was a violation of 10 CFR 50.59 and is being treated as a non-cited violation. (Section 1R11)
Inspection Report# : 2000008*(pdf)*

Emergency Preparedness

Significance: SL-III Nov 10, 2001
Identified By: NRC
Item Type: VIO Violation
Inoperable off-site sirens not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry
In NRC letter dated October 23, 2001, we issued a Severity Level III - Notice of Violation, (EA-01-189). (VIO 50-352;353/01-11-03) because inoperable off-site sirens were not identified due to falsified maintenance and testing records and installation of jumpers that bypassed siren failure detection circuitry. This violation is considered closed because the NRC has sufficient information on the docket concerning this issue and has documented inspection results directly related to the violation in combined inspection report 50-352/01-013 and 50-353/01-013. (4OA5.2)
Inspection Report# : 2001011*(pdf)*

Significance: W Sep 24, 2001
Identified By: NRC
Item Type: FIN Finding
Emergency Preparedness - Inadequate Drill Critique
WHITE. The inspectors determined that the licensee's critique of the February 9, 2001, operator crew drill to be inadequate due to the untimely identification of an emergency classification problem. The crew had inappropriately declared a General Emergency based upon incorrect criteria when a legitimate criterion was available. (Section 1EP6.b) The failure to identify a risk significant planning standard during a drill was more than minor and significant because it had a credible impact on safety, in that inadequate critiques could result in classification errors which, in an actual event, could impact offsite agencies' abilities to implement protective actions for the public. EA-01-246 The NRC issued the final results of the significance determination in a letter dated November 19, 2001.
Inspection Report# : 2001016*(pdf)*
Inspection Report# : 2002011*(pdf)*

Significance: G Mar 31, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Drill Evaluation
The inspector identified a Non-Cited Violation associated with the failure to correct a previously identified emergency preparedness exercise deficiency associated with the accuracy of the average reactor water level indication value displayed in the Technical Support Center and Emergency Operations Facility. The finding was of very low significance because although the emergency preparedness deficiency was not corrected, it did not result in a failure to meet an emergency preparedness planning standard. (Section 1EP6)
Inspection Report# : 2001003*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to secure five bags of trash, marked as containing radioactive material and stored in an unrestricted area, from unauthorized removal in accordance with 10 CFR 20.1801
The inspector identified a non-cited violation of 10 CFR 20.1801 having very low safety significance. On March 11, 2002, Exelon failed to prevent five bags of trash, marked as containing radioactive material and stored in an unrestricted area within the protected area, from being transported to the Pottstown Landfill for disposal. The Pottstown Landfill was not licensed under 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," to dispose of radioactive materials. Exelon's failure to prevent the removal of five bags of radioactive material from the protected area to the Pottstown Landfill for disposal was determined to have very low safety significance using the Public Radiation Significance Determination Process. The finding involved radiation material control but not transportation. Public exposure was not greater than 0.005 rem, and there have not been more than 5 instances of such occurrences in the current inspection period. (Section 2PS2)
Inspection Report# : 2002003*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A Jun 26, 2002
Identified By: NRC
Item Type: FIN Finding
Biennial baseline inspection of Problem Identification and Resolution
The team concluded that the implementation of the corrective action program at Limerick Generating Station (LGS) was adequate. The licensee was effective at identifying problems and putting them in the corrective action process. Issues were prioritized and evaluated appropriately and in a timely fashion. The evaluations of significant problems

were of sufficient depth to identify likely root or apparent causes, and to address the potential extent of the circumstances contributing to the problem. Corrective actions that addressed the causes of problems were generally identified and implemented. However, the team identified that some elements of the corrective action program had not been fully effective in resolving component mis-positioning events and errors associated with equipment clearance and tagging. The team also noted that the licensee's oversight committees identified similar findings and that increased management attention has been directed to this area.
Inspection Report# : 2002010*(pdf)*

Significance: G May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Transfer of byproduct material to an Agreement State licensee without verifying license authorized receipt of the type, form, and quantity of byproduct material to transferred (10 CFR 30.41(c)).
The inspector identified a non-cited violation of 10 CFR 30.41 having very low safety significance. On December 21, 2001, Exelon transferred byproduct material to General Electric (GE),Wilmington, North Carolina, an Agreement State licensee, without verifying that GE-Wilmington's license authorized receipt of the type, form, and quantity of byproduct material prior to transfer, in accordance with 10 CFR 30.41, "Transfer of byproduct material," section (c). Exelon transferred 1.28 curies of Kr-85 byproduct material in the form of sealed sources to GE-Wilmington licensee that was only authorized to receive sealed sources in the amount of 0.2 curies. The nature of this particular finding is not encompassed by any existing cornerstone or Safety Significance Determination Process, but has been reviewed by NRC management and was determined to be a finding having very low safety significance. The inspector determined that there was no actual safety consequence associated with this condition in that the GE-Wilmington facility was able to appropriately receive, control, repackage, and ship the sealed sources to a licensee authorized to receive such material. (Section 4OA2)
Inspection Report# : 2002003*(pdf)*

Significance: N/A Jun 27, 2001
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion regarding the effectiveness of the Problem Identification and Resolution (PI&R) program from the annual PI&R inspection.
The team concluded that the overall implementation of the corrective action program was adequate. Exelon was, with a few exceptions, effective at identifying problems. In general, problems were properly captured and characterized in the Performance Enhancement Program (PEP). Based upon the sample reviewed, items entered into PEPs were properly classified and prioritized for resolution. Evaluations and root cause analyses were of good depth and quality. Exelon's resolution of problems was adequate. The prescribed corrective actions appeared appropriate to correct the problems and were generally completed in a timely manner. However, the team noted that prior corrective actions were not fully effective in addressing weaknesses in operability determinations.
Inspection Report# : 2001006*(pdf)*

Significance: N/A Jun 30, 2000
Identified By: NRC
Item Type: FIN Finding
Problem Identification and Resolution
Overall, the LGS was found to have an adequate PI&R program. Observations showed a well used multi-tier problem reporting system that included a daily multi-departmental panel review of each newly issued corrective action item to assess its significance, to assign responsibility, and to assign priority for resolution through the action item tracking process. Problem cause analysis was adequate for individual items including operability and reportability evaluations. Corrective actions were generally effective and found to be timely and commensurate with the safety significance of the issue. Based on numerous interviews conducted during this inspection, workers at the station felt free to input safety issues into the station's PI&R programs. The team identified areas for improvement in the PI&R program. For example, some elements of the PI&R program have not been fully effective in resolving common causes, particularly human performance issues. Human performance is a cross-cutting issue that had been identified as a contributor to various problems occurring at the station including automatic reactor shutdowns, component mis-positionings, and

procedure violations. PECO identified similar areas for improvement and has initiated specific documented plans and actions to address this matter and improve performance in PI&R. (Section 4OA2)
Inspection Report# : 2000005*(pdf)*

Significance: SL-IV Jun 16, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Problem/Issue Cause Analysis
NO COLOR. A Non-cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified, associated with five examples of failure to implement the written procedures of the corrective action program, an activity affecting quality. Four examples involved failure to properly classify adverse trend corrective action items as required by the corrective action program procedure LR-CG-10. The adverse trend items were associated with various topics including component mispositioning, procedure adherence, and reactor downpower events. The fifth example of failure to implement LR-CG-10 involved failure to conduct an operability evaluation of emergency diesel generators (EDGs) in April 2000, when PECO determined that 70 of 88 flex-coupling clamps on the cooling water systems of its EDGs were over-tightened. The failure to implement the procedures of the corrective action program is considered more than a minor violation in that it suggests a programmatic problem that has a credible potential to impact safety and involved more than an isolated occurrence.
Inspection Report# : 2000005*(pdf)*

Last modified : December 02, 2002

Limerick 2

Initiating Events

Significance: G Sep 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Main Turbine Retrofit and Associated Change to GP-5, "Steady State Operations"
The inspectors identified a non-cited violation of 10 CFR 50.59, because Exelon staff did not analyze the effect of the increased condensate temperature on all components potentially impacted. Exelon engineering and chemistry personnel did not correctly follow procedures when conducting a 10 CFR 50.59 screening for a change to Procedure GP-5, "Steady State Operations." Consequently, Exelon did not perform a safety evaluation when required. The procedure change contributed to an unplanned reactor shutdown due to degrading condenser vacuum on July 23, 2002. This finding involved a human performance error because engineering and chemistry personnel did not correctly evaluate whether the proposed change affected the Safety Analysis Report. This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process, because although the finding contributed to an unplanned reactor shutdown, it did not affect the availability of mitigation equipment, it did not contribute to the likelihood of a loss of coolant accident initiator, and it did not contribute to the likelihood of a fire or flood event. (Section 1R17)
Inspection Report# : 2002005*(pdf)*

Significance: G Jul 27, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Unit 2 Reactor Level Transient
The inspectors identified a non-cited violation of Technical Specification 6.8.1., "Procedures," because operators failed to follow procedures while placing a reactor feed pump in service, which led to a significant reactor level transient. This finding involved a human performance error because control room operators performed procedural steps out of sequence during a non-routine pump evolution. This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process because it did not contribute to the likelihood of a loss of coolant accident initiator, the unavailability of mitigation equipment, or fire and flooding events. (Section 1R14)
Inspection Report# : 2002005*(pdf)*

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to follow station procedures for analyzing degraded main control room indications.
The inspector identified a finding of very low safety significance (Green) that is also a non-cited violation of Technical Specification 6.8.1, "Procedures." Exelon did not assess the operational impact of a degraded ‘1A' recirculation loop temperature instrument. Consequently, when operators used this degraded temperature instrument to monitor coolant temperature while in a Cold Shutdown condition, the operators did not recognize, due to erroneous temperature indication by the degraded instrument, that the actual reactor coolant temperature had exceeded 200 degrees and resulted in an inadvertent operational condition change to a Hot Shutdown condition. This finding was determined to be of very low safety significance (Green) by the Reactor Inspection Findings for At-Power Situations because it did not increase the likelihood of a primary system LOCA, did not contribute to the likelihood of a reactor trip, and did not increase the likelihood of a fire or internal/external flood.
Inspection Report# : 2002004*(pdf)*

Mitigating Systems

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to fully implement station procedure requirements for post-scram reviews.

The inspector identified a non-cited violation of Technical Specification 6.8.1, "Procedures," because Exelon did not follow post scram station procedures during the investigation of the cause of an unexpected high reactor water level condition that led to the trip of all three reactor feedwater pumps following a Unit 1 scram on May 19, 2002. Exelon's post scram review did not identify that the level control setpoint setdown function of the feedwater control system did not actuate which caused the unexpected high reactor water level condition. Exelon's failure to properly investigate the cause of the reactor high water level condition was determined to have very low safety significance (Green) using a Phase 3 analysis.
Inspection Report# : 2002004*(pdf)*

Significance: G Mar 30, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to meet TS 3.0.4 due to change in Operational Conditions with unsatisfactory results on a Unit 1 Division II battery charger surveillance test.
Technical Specification 3.0.4 states that entry into an Operational Condition shall not be made when the conditions for the Limiting Condition for Operation are not met and the associated Action requires a shutdown if they are not met within a specified time interval. Contrary to the above, on or about March 19, 2002, Unit 1 entered Operational Condition 2 (startup), with the Division II DC Battery Charger 1B1D103 inoperable due to an unsatisfactory surveillance test, a condition that requires a shutdown. This item is documented in the licensee corrective action program as CR 100013. This is being treated as a Non-Cited Violation.
Inspection Report# : 2002002*(pdf)*

Significance: G Mar 30, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to meet TS 3.8.2.2 due to unsatisfactory results on a Unit 1 Division II battery charger surveillance test, with two other DC Power Divisions inoperable during a refueling outage
Technical Specification 3.8.2.2 requires that two of the four divisions of DC power be operable in Operational Conditions 4, 5, and *. Contrary to the above, during the period March 14 through March 17, 2002, while in refueling outage 1R09, the Unit 1 DC Power Divisions I, II and III were inoperable concurrently. This condition occurred due to an unsatisfactory surveillance test and lack of supervisory review. This item is documented in the licensee corrective action program as CR 100013. This is being treated as a Non-Cited Violation.
Inspection Report# : 2002002*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to secure five bags of trash, marked as containing radioactive material and stored in an unrestricted area, from unauthorized removal in accordance with 10 CFR 20.1801
The inspector identified a non-cited violation of 10 CFR 20.1801 having very low safety significance. On March 11, 2002, Exelon failed to prevent five bags of trash, marked as containing radioactive material and stored in an unrestricted area within the protected area, from being transported to the Pottstown Landfill for disposal. The Pottstown Landfill was not licensed under 10 CFR 61, "Licensing Requirements for

Land Disposal of Radioactive Waste," to dispose of radioactive materials. Exelon's failure to prevent the removal of five bags of radioactive material from the protected area to the Pottstown Landfill for disposal was determined to have very low safety significance using the Public Radiation Significance Determination Process. The finding involved radiation material control but not transportation. Public exposure was not greater than 0.005 rem, and there have not been more than 5 instances of such occurrences in the current inspection period. (Section 2PS2)
Inspection Report# : 2002003*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A Jun 26, 2002
Identified By: NRC
Item Type: FIN Finding
Biennial baseline inspection of Problem Identification and Resolution
The team concluded that the implementation of the corrective action program at Limerick Generating Station (LGS) was adequate. The licensee was effective at identifying problems and putting them in the corrective action process. Issues were prioritized and evaluated appropriately and in a timely fashion. The evaluations of significant problems were of sufficient depth to identify likely root or apparent causes, and to address the potential extent of the circumstances contributing to the problem. Corrective actions that addressed the causes of problems were generally identified and implemented. However, the team identified that some elements of the corrective action program had not been fully effective in resolving component mis-positioning events and errors associated with equipment clearance and tagging. The team also noted that the licensee's oversight committees identified similar findings and that increased management attention has been directed to this area.
Inspection Report# : 2002010*(pdf)*

Significance: 

May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Transfer of byproduct material to an Agreement State licensee without verifying license authorized receipt of the type, form, and quantity of byproduct material to transferred (10 CFR 30.41(c)).
The inspector identified a non-cited violation of 10 CFR 30.41 having very low safety significance. On December 21, 2001, Exelon transferred byproduct material to General Electric (GE),Wilmington, North Carolina, an Agreement State licensee, without verifying that GE-Wilmington's license authorized receipt of the type, form, and quantity of byproduct material prior to transfer, in accordance with 10 CFR 30.41, "Transfer of byproduct material," section (c). Exelon transferred 1.28 curies of Kr-85 byproduct material in the form of sealed sources to GE-Wilmington licensee that was only authorized to receive sealed sources in the amount of 0.2 curies. The nature of this particular finding is not encompassed by any existing cornerstone or Safety Significance Determination Process, but has been reviewed by NRC management and was determined to be a finding having very low safety significance. The inspector determined that there was no actual safety consequence associated with this condition in that the GE-Wilmington facility was able to appropriately receive, control, repackage, and ship the sealed sources to a licensee authorized to receive such material. (Section 4OA2)
Inspection Report# : 2002003*(pdf)*

Last modified : March 25, 2003

Limerick 2
1Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Sep 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Main Turbine Retrofit and Associated Change to GP-5, "Steady State Operations"
The inspectors identified a non-cited violation of 10 CFR 50.59, because Exelon staff did not analyze the effect of the increased condensate temperature on all components potentially impacted. Exelon engineering and chemistry personnel did not correctly follow procedures when conducting a 10 CFR 50.59 screening for a change to Procedure GP-5, "Steady State Operations." Consequently, Exelon did not perform a safety evaluation when required. The procedure change contributed to an unplanned reactor shutdown due to degrading condenser vacuum on July 23, 2002. This finding involved a human performance error because engineering and chemistry personnel did not correctly evaluate whether the proposed change affected the Safety Analysis Report. This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process, because although the finding contributed to an unplanned reactor shutdown, it did not affect the availability of mitigation equipment, it did not contribute to the likelihood of a loss of coolant accident initiator, and it did not contribute to the likelihood of a fire or flood event. (Section 1R17)
Inspection Report# : 2002005*(pdf)*

Significance: G Jul 27, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Unit 2 Reactor Level Transient
The inspectors identified a non-cited violation of Technical Specification 6.8.1., "Procedures," because operators failed to follow procedures while placing a reactor feed pump in service, which led to a significant reactor level transient. This finding involved a human performance error because control room operators performed procedural steps out of sequence during a non-routine pump evolution. This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process because it did not contribute to the likelihood of a loss of coolant accident initiator, the unavailability of mitigation equipment, or fire and flooding events. (Section 1R14)
Inspection Report# : 2002005*(pdf)*

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to follow station procedures for analyzing degraded main control room indications.
The inspector identified a finding of very low safety significance (Green) that is also a non-cited violation of Technical Specification 6.8.1, "Procedures." Exelon did not assess the operational impact of a degraded ‘1A' recirculation loop temperature instrument. Consequently, when operators used this degraded temperature instrument to monitor coolant temperature while in a Cold Shutdown condition, the operators did not recognize, due to erroneous temperature

indication by the degraded instrument, that the actual reactor coolant temperature had exceeded 200 degrees and resulted in an inadvertent operational condition change to a Hot Shutdown condition. This finding was determined to be of very low safety significance (Green) by the Reactor Inspection Findings for At-Power Situations because it did not increase the likelihood of a primary system LOCA, did not contribute to the likelihood of a reactor trip, and did not increase the likelihood of a fire or internal/external flood.
Inspection Report# : 2002004*(pdf)*

Mitigating Systems

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Average Power Range Monitor Operability During Testing
The inspectors identified a finding of very low significance (Green) that is also a non-cited violation of 10 CFR 50, Appendix B, Criterion V "Procedures," because Exelon's procedure governing local power range monitor (LPRM) maintenance did not include provisions to ensure that the associated average power range monitor (APRM) remained operable. Specifically, the procedure did not include steps to ensure the APRM remained within the technical specification required accuracy when changing the LPRM input configuration to the APRM and at the completion of the maintenance. This finding was determined to have very low safety significance because it did not result in an actual loss of safety function, and it did not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event. (Section 1R19)
Inspection Report# : 2003002*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Unexpected Scram Bypass Due to a Degraded Transistor
The inspectors identified a finding of very low significance (Green) that is also a non-cited violation of 10 CFR 50, Appendix "B," Criterion XVI, because Exelon had not implemented adequate measures to preclude repetition of a significant condition adverse to quality, specifically a defective transistor in safety related protection system trip units that resulted in a portion of the reactor protection system being inoperable. This finding was determined to have very low safety significance because it did not result in an actual loss of safety function, and it did not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event. The inspectors identified that this finding involved a human performance error because the System Manager performing a review of the test data did not identify that one analog trip unit exceeded the repair criteria. (Section 4OA2)
Inspection Report# : 2003002*(pdf)*

Significance: G Jun 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to fully implement station procedure requirements for post-scram reviews.
The inspector identified a non-cited violation of Technical Specification 6.8.1, "Procedures," because Exelon did not follow post scram station procedures during the investigation of the cause of an unexpected high reactor water level condition that led to the trip of all three reactor feedwater pumps following a Unit 1 scram on May 19, 2002. Exelon's

post scram review did not identify that the level control setpoint setdown function of the feedwater control system did not actuate which caused the unexpected high reactor water level condition. Exelon's failure to properly investigate the cause of the reactor high water level condition was determined to have very low safety significance (Green) using a Phase 3 analysis.
Inspection Report# : 2002004*(pdf)*

Barrier Integrity

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: FIN Finding
Main Steam Isolation Valve Surveillance Test Preconditioning
The inspectors identified a finding of very low significance (Green) because Exelon's practice of performing preventative maintenance prior to required surveillance testing of the MSIVs masked the as-found conditions of the valves and this practice had not been evaluated by Exelon. This finding was determined to be of very low safety significance because the issue involved inadequate testing and did not degrade the MSIVs capability to perform its safety function. (Section 1R22)
Inspection Report# : 2003002*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Dropped New Fuel Bundles
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because maintenance technicians did not follow procedures while performing an inspection of new fuel bundles. This finding was determined to have very low safety significance because fuel barrier findings screen as Green. The inspectors identified that this finding involved a human performance error because technicians did not follow a maintenance procedure. Additionally, ineffective supervisory oversight, another human performance factor, contributed to this event. (Section 1R20)
Inspection Report# : 2003002*(pdf)*

Emergency Preparedness

Significance: SL-IV Jun 02, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
10CFR50.54(q) violation for decreasing the effectiveness of the plan by changing EALs that address toxic gas without prior NRC approval
The licensee changed its emergency action level schemes such that there would e a reduction in declarable events as the emphasis shifted from personnel safety to equipment status. The changes were determined to be a decrease in the effectiveness of the emergency plans. Decreases in the effectiveness of an emergency plan must receive NRC review prior to implementation. The changes were implemented without NRC approval. The finding was determined to be more than minor as its significance was related to the impact it would have on the mobilization of the emregency

response organization and preclude offsite agencies from being aware of adverse conditions on site. The licensee accepted the NRC's position and entered this issue into its corrective action program (Condition Report 139997) and will change the emergency action levels back to the original wording. The implementation of the changes which decreased the effectiveness of the emergency plans, without NRC review, is being treaed as a non-cited violation consistent with Section VI.A. of the Enforcement Policy, issued on May 1, 2000 (65 FR 25388). (NCV 50-277; 50-278/03-008-01 and 50-352;50-353/03-006) (Section 1EP4)
Inspection Report# : 2003006*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to secure five bags of trash, marked as containing radioactive material and stored in an unrestricted area, from unauthorized removal in accordance with 10 CFR 20.1801
The inspector identified a non-cited violation of 10 CFR 20.1801 having very low safety significance. On March 11, 2002, Exelon failed to prevent five bags of trash, marked as containing radioactive material and stored in an unrestricted area within the protected area, from being transported to the Pottstown Landfill for disposal. The Pottstown Landfill was not licensed under 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," to dispose of radioactive materials. Exelon's failure to prevent the removal of five bags of radioactive material from the protected area to the Pottstown Landfill for disposal was determined to have very low safety significance using the Public Radiation Significance Determination Process. The finding involved radiation material control but not transportation. Public exposure was not greater than 0.005 rem, and there have not been more than 5 instances of such occurrences in the current inspection period. (Section 2PS2)
Inspection Report# : 2002003*(pdf)*

Physical Protection

Miscellaneous

Significance: N/A Jun 26, 2002
Identified By: NRC
Item Type: FIN Finding
Biennial baseline inspection of Problem Identification and Resolution
The team concluded that the implementation of the corrective action program at Limerick Generating Station (LGS) was adequate. The licensee was effective at identifying problems and putting them in the corrective action process. Issues were prioritized and evaluated appropriately and in a timely fashion. The evaluations of significant problems

were of sufficient depth to identify likely root or apparent causes, and to address the potential extent of the circumstances contributing to the problem. Corrective actions that addressed the causes of problems were generally identified and implemented. However, the team identified that some elements of the corrective action program had not been fully effective in resolving component mis-positioning events and errors associated with equipment clearance and tagging. The team also noted that the licensee's oversight committees identified similar findings and that increased management attention has been directed to this area.
Inspection Report# : 2002010*(pdf)*

Significance:  May 11, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Transfer of byproduct material to an Agreement State licensee without verifying license authorized receipt of the type, form, and quantity of byproduct material to transferred (10 CFR 30.41(c)).
The inspector identified a non-cited violation of 10 CFR 30.41 having very low safety significance. On December 21, 2001, Exelon transferred byproduct material to General Electric (GE),Wilmington, North Carolina, an Agreement State licensee, without verifying that GE-Wilmington's license authorized receipt of the type, form, and quantity of byproduct material prior to transfer, in accordance with 10 CFR 30.41, "Transfer of byproduct material," section (c). Exelon transferred 1.28 curies of Kr-85 byproduct material in the form of sealed sources to GE-Wilmington licensee that was only authorized to receive sealed sources in the amount of 0.2 curies. The nature of this particular finding is not encompassed by any existing cornerstone or Safety Significance Determination Process, but has been reviewed by NRC management and was determined to be a finding having very low safety significance. The inspector determined that there was no actual safety consequence associated with this condition in that the GE-Wilmington facility was able to appropriately receive, control, repackage, and ship the sealed sources to a licensee authorized to receive such material. (Section 4OA2)
Inspection Report# : 2002003*(pdf)*

Last modified : May 30, 2003

Limerick 2
2Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Nov 04, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Unit 2 Reactor Level Transient
The inspectors identified a non-cited violation of Technical Specification 6.8.1., "Procedures," because operators failed to follow procedures while placing a reactor feed pump in service, which led to a significant reactor level transient. This finding involved a human performance error because control room operators performed procedural steps out of sequence during a non-routine pump evolution. This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process because it did not contribute to the likelihood of a loss of coolant accident initiator, the unavailability of mitigation equipment, or fire and flooding events. (Section 1R14)
Inspection Report# : 2002005*(pdf)*

Significance: G Nov 04, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Main Turbine Retrofit and Associated Change to GP-5, "Steady State Operations"
The inspectors identified a non-cited violation of 10 CFR 50.59, because Exelon staff did not analyze the effect of the increased condensate temperature on all components potentially impacted. Exelon engineering and chemistry personnel did not correctly follow procedures when conducting a 10 CFR 50.59 screening for a change to Procedure GP-5, "Steady State Operations." Consequently, Exelon did not perform a safety evaluation when required. The procedure change contributed to an unplanned reactor shutdown due to degrading condenser vacuum on July 23, 2002. This finding involved a human performance error because engineering and chemistry personnel did not correctly evaluate whether the proposed change affected the Safety Analysis Report. This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process, because although the finding contributed to an unplanned reactor shutdown, it did not affect the availability of mitigation equipment, it did not contribute to the likelihood of a loss of coolant accident initiator, and it did not contribute to the likelihood of a fire or flood event. (Section 1R17)
Inspection Report# : 2002005*(pdf)*

Mitigating Systems

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: FIN Finding

Performing Preventive Maintenance Prior to Required Surveillance Testing of Recirculation Pump Trip Breakers and Safety-Related Battery Chargers
The insp. identified a finding of very low significance (Green) because Exelon's practice of performing preventive maintenance prior to required surveillance testing of recirc pump trip breakers and safety-related battery chargers masked the as-found conditions of these components, and this practice had not been evaluated. The finding is considered more than minor because it affected the ability to detect component degradation which would adversely impact the reliability of the RPT breakers and battery chargers to respond to initiating events and prevent undesirable consequences. This finding is of very low safety significance because it involved inadequate testing and did not degrade the capability of these components to perform their safety functions. The inspectors also identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. After the inspectors noted the MSIV preconditioning issue in February 2003, Exelon's corrective action included a review of other outage-related activities for unacceptable preconditioning. Exelon's corrective action was narrow in scope and did not identify the RPT breaker and battery charger preconditioning issues.
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Average Power Range Monitor Operability During Testing
The inspectors identified a finding of very low significance (Green) that is also a non-cited violation of 10 CFR 50, Appendix B, Criterion V "Procedures," because Exelon's procedure governing local power range monitor (LPRM) maintenance did not include provisions to ensure that the associated average power range monitor (APRM) remained operable. Specifically, the procedure did not include steps to ensure the APRM remained within the technical specification required accuracy when changing the LPRM input configuration to the APRM and at the completion of the maintenance. This finding was determined to have very low safety significance because it did not result in an actual loss of safety function, and it did not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event. (Section 1R19)
Inspection Report# : 2003002*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Unexpected Scram Bypass Due to a Degraded Transistor
The inspectors identified a finding of very low significance (Green) that is also a non-cited violation of 10 CFR 50, Appendix "B," Criterion XVI, because Exelon had not implemented adequate measures to preclude repetition of a significant condition adverse to quality, specifically a defective transistor in safety related protection system trip units that resulted in a portion of the reactor protection system being inoperable. This finding was determined to have very low safety significance because it did not result in an actual loss of safety function, and it did not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event. The inspectors identified that this finding involved a human performance error because the System Manager performing a review of the test data did not identify that one analog trip unit exceeded the repair criteria. (Section 4OA2)
Inspection Report# : 2003002*(pdf)*

Barrier Integrity

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon's Main Steam Isolation Valve Stroke Time Test Methodology
The inspectors identified a finding of very low significance (Green) that is also a violation of 10 CFR 50 Appendix B, Criterion XI, "Test Control," because Exelon's MSIV stroke time test procedure did not include sufficient steps to assure that, when the MSIVs are in-service in Operational Conditions 1, the MSIV full closure times will meet TS requirements. The finding was considered more than minor, in that the issue was associated with the Maintain Functionality of Containment Procedure Quality attribute of the Barrier Integrity cornerstone, and it affected the cornerstone objective. The Barrier Integrity cornerstone objective was affected because the inadequate testing procedures adversely affect assurance that the containment would protect the public from radionuclide releases caused by accidents or events. This finding was also associated with the Procedure Quality attribute of the Mitigating Systems cornerstone, and it affected the cornerstone objective. The cornerstone objective was affected because the testing did not ensure the reliability of the MSIV's to respond to initiating events to prevent undesirable consequences. This finding was determined to have very low safety significance (Green) by Phase 2 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process. This finding was determined to be of very low safety significance because the issue involved inadequate testing and did not degrade the MSIVs capability to perform its safety function. Therefore, no mitigation equipment or sequences in Phase 2 were adversely impacted.
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: FIN Finding
Main Steam Isolation Valve Surveillance Test Preconditioning
The inspectors identified a finding of very low significance (Green) because Exelon's practice of performing preventative maintenance prior to required surveillance testing of the MSIVs masked the as-found conditions of the valves and this practice had not been evaluated by Exelon. This finding was determined to be of very low safety significance because the issue involved inadequate testing and did not degrade the MSIVs capability to perform its safety function. (Section 1R22)
Inspection Report# : 2003002*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Dropped New Fuel Bundles
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because maintenance technicians did not follow procedures while performing an inspection of new fuel bundles. This finding was determined to have very low safety significance because fuel barrier findings screen as Green. The inspectors identified that this finding involved a human performance error because technicians did not follow a maintenance procedure. Additionally, ineffective supervisory oversight, another human performance factor, contributed to this event. (Section 1R20)
Inspection Report# : 2003002*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : September 04, 2003

Limerick 2
3Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Nov 04, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Unit 2 Reactor Level Transient
The inspectors identified a non-cited violation of Technical Specification 6.8.1., "Procedures," because operators failed to follow procedures while placing a reactor feed pump in service, which led to a significant reactor level transient. This finding involved a human performance error because control room operators performed procedural steps out of sequence during a non-routine pump evolution.

This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process because it did not contribute to the likelihood of a loss of coolant accident initiator, the unavailability of mitigation equipment, or fire and flooding events. (Section 1R14)
Inspection Report# : 2002005*(pdf)*

Significance: G Nov 04, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Main Turbine Retrofit and Associated Change to GP-5, "Steady State Operations"
The inspectors identified a non-cited violation of 10 CFR 50.59, because Exelon staff did not analyze the effect of the increased condensate temperature on all components potentially impacted. Exelon engineering and chemistry personnel did not correctly follow procedures when conducting a 10 CFR 50.59 screening for a change to Procedure GP-5, "Steady State Operations." Consequently, Exelon did not perform a safety evaluation when required. The procedure change contributed to an unplanned reactor shutdown due to degrading condenser vacuum on July 23, 2002. This finding involved a human performance error because engineering and chemistry personnel did not correctly evaluate whether the proposed change affected the Safety Analysis Report.

This finding was determined to have very low safety significance by the Reactor Inspection Findings for At-Power Situations Significance Determination Process, because although the finding contributed to an unplanned reactor shutdown, it did not affect the availability of mitigation equipment, it did not contribute to the likelihood of a loss of coolant accident initiator, and it did not contribute to the likelihood of a fire or flood event. (Section 1R17)
Inspection Report# : 2002005*(pdf)*

Mitigating Systems

Significance: G Sep 27, 2003

Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CH-1010
The inspectors identified a finding of very low safety significance that is also a NCV of TS 6.8.1, "Procedures," because chemistry staff did not follow procedures. Specifically, spray pond water samples were not analyzed for soluble manganese within the required weekly frequency and when manganese in the spray pond water was above 100 parts-per-billion (ppb), the actions specified in the procedure were not taken.

The finding is more than minor because it is similar to example 4.a in App. E of NRC IMC 0612. This finding was determined to have very low safety significance by Phase 1 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process because the performance deficiency did not result in a loss of safety function and is not potentially risk significant due to a seismic, flood, fire, or severe weather initiating event.

The inspectors also identified that a contributing cause of this finding involved a human performance error because neither a chemistry technician nor the technician's supervisor followed the steps prescribed by the procedure.

Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: FIN Finding
Performing Preventive Maintenance Prior to Required Surveillance Testing of Recirculation Pump Trip Breakers and Safety-Related Battery Chargers
The insp. identified a finding of very low significance (Green) because Exelon's practice of performing preventive maintenance prior to required surveillance testing of recirc pump trip breakers and safety-related battery chargers masked the as-found conditions of these components, and this practice had not been evaluated.

The finding is considered more than minor because it affected the ability to detect component degradation which would adversely impact the reliability of the RPT breakers and battery chargers to respond to initiating events and prevent undesirable consequences. This finding is of very low safety significance because it involved inadequate testing and did not degrade the capability of these components to perform their safety functions.

The inspectors also identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. After the inspectors noted the MSIV preconditioning issue in February 2003, Exelon's corrective action included a review of other outage-related activities for unacceptable preconditioning. Exelon's corrective action was narrow in scope and did not identify the RPT breaker and battery charger preconditioning issues.
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Average Power Range Monitor Operability During Testing
The inspectors identified a finding of very low significance (Green) that is also a non-cited violation of 10 CFR 50, Appendix B, Criterion V "Procedures," because Exelon's procedure governing local power range monitor (LPRM) maintenance did not include provisions to ensure that the associated average power range monitor (APRM) remained operable. Specifically, the procedure did not include steps to ensure the APRM remained within the technical specification required accuracy when changing the LPRM input configuration to the APRM and at the completion of the maintenance.

This finding was determined to have very low safety significance because it did not result in an actual loss of safety function, and it did not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event. (Section 1R19)
Inspection Report# : 2003002*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Unexpected Scram Bypass Due to a Degraded Transistor
The inspectors identified a finding of very low significance (Green) that is also a non-cited violation of 10 CFR 50, Appendix "B," Criterion XVI, because Exelon had not implemented adequate measures to preclude repetition of a significant condition adverse to quality, specifically a defective transistor in safety related protection system trip units that resulted in a portion of the reactor protection system being inoperable.

This finding was determined to have very low safety significance because it did not result in an actual loss of safety function, and it did not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event.

The inspectors identified that this finding involved a human performance error because the System Manager performing a review of the test data did not identify that one analog trip unit exceeded the repair criteria. (Section 4OA2)
Inspection Report# : 2003002*(pdf)*

Barrier Integrity

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Meet 10CFR 55.53(fg)(2) When Reactivating Senior Operators to Support Fuel Handling
The inspectors identified a non-cited violation of 10CFR55.53(f)(2) regarding the licensee's method used to reactivate senior operator licenses to support refueling. The operator licenses were reactivated without the required direct supervision being present during the shift under-instruction time.

This finding was determined to be more than minor but of very low safety significance. It is more than minor because it is similar to example 2h in App. E of IMC 0612. The performance deficiency is related to operator license conditions. The performance deficiency involved more than 20% of the senior operator license reactivations to support refueling operations not meeting the requirements of 10CFR55.53(f)(2). Accordingly, the performance deficiency was determined to be of very low safety significance.
Inspection Report# : 2003004*(pdf)*

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Performed Core Alterations Without Maintaining Secondary Containment Integrity

A self-revealing NCV of TS 3.6.5.1.2 was identified because Exelon did not maintain refueling area secondary containment integrity while performing core alterations during a refueling outage.
The finding is more than minor because the issue was associated with the human performance attribute of the Barrier Integrity cornerstone, and it affected the cornerstone objective. The Barrier Integrity cornerstone objective was affected because secondary containment functionality was not maintained when required by TSs. This finding was determined to be of very low safety significance (Green) by NRC IMC 0609, App. G, Shutdown Operations Significance Determination Process. The plant conditions while secondary containment was breached did not require a phase 2 assessment and therefore screened as Green per the Appendix G, Section 1 guidance.
The inspectors also noted that a contributing cause of this finding was related to a human performance error because operators did not properly verify TSs compliance when breaching secondary containment.
Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon's Main Steam Isolation Valve Stroke Time Test Methodology
The inspectors identified a finding of very low significance (Green) that is also a violation of 10 CFR 50 Appendix B, Criterion XI, "Test Control," because Exelon's MSIV stroke time test procedure did not include sufficient steps to assure that, when the MSIVs are in-service in Operational Conditions 1, the MSIV full closure times will meet TS requirements.
The finding was considered more than minor, in that the issue was associated with the Maintain Functionality of Containment Procedure Quality attribute of the Barrier Integrity cornerstone, and it affected the cornerstone objective. The Barrier Integrity cornerstone objective was affected because the inadequate testing procedures adversely affect assurance that the containment would protect the public from radionuclide releases caused by accidents or events. This finding was also associated with the Procedure Quality attribute of the Mitigating Systems cornerstone, and it affected the cornerstone objective. The cornerstone objective was affected because the testing did not ensure the reliability of the MSIV's to respond to initiating events to prevent undesirable consequences.
This finding was determined to have very low safety significance (Green) by Phase 2 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process. This finding was determined to be of very low safety significance because the issue involved inadequate testing and did not degrade the MSIVs capability to perform its safety function. Therefore, no mitigation equipment or sequences in Phase 2 were adversely impacted.
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: FIN Finding
Main Steam Isolation Valve Surveillance Test Preconditioning
The inspectors identified a finding of very low significance (Green) because Exelon's practice of performing preventative maintenance prior to required surveillance testing of the MSIVs masked the as-found conditions of the valves and this practice had not been evaluated by Exelon.

This finding was determined to be of very low safety significance because the issue involved inadequate testing and did not degrade the MSIVs capability to perform its safety function. (Section 1R22)
Inspection Report# : 2003002*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC

Item Type: NCV NonCited Violation
Dropped New Fuel Bundles
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because maintenance technicians did not follow procedures while performing an inspection of new fuel bundles.

This finding was determined to have very low safety significance because fuel barrier findings screen as Green.

The inspectors identified that this finding involved a human performance error because technicians did not follow a maintenance procedure. Additionally, ineffective supervisory oversight, another human performance factor, contributed to this event. (Section 1R20)
Inspection Report# : 2003002*(pdf)*

Emergency Preparedness

Significance: SL-IV Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Perform a 10 CFR 50.54(q) Review Resulting in Removal of a Provision Without Prior NRC Approval
The inspector identified a SL IV NCV of 10 CFR 50.54(q) because the licensee decreased the effectiveness of its emergency plan in one area by removing a provision to provide volunteer bus drivers to two school districts within the 10 mile Emergency Planning Zone for evacuating students during a radiological event. The change was implemented without NRC approval.
Changing emergency plan provisions without prior NRC approval impacts the NRC's ability to perform its regulatory function and is therefore processed through traditional enforcement as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000 (65 FR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a SL IV violation because it involved a failure to meet a requirement not directly related to assessment and notification. This NCV was also determined to have very low safety significance since Exelon had maintained a list of volunteers that would have been able to perform the function if needed.
Inspection Report# : 2003004*(pdf)*

Significance: SL-IV Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Retain a Record of the 10 CFR 50.54(q) Review of the Deleted Portions of the Emergency Plan
The inspector identified a SL IV non-cited violation of 10 CFR 50.54(q). During the implementation of a new Standard Emergency Plan, Exelon did not retain a record that determined whether a decrease-in-effectiveness had or had not occurred when Exelon generated the new Standard Emergency Plan that deleted portions of the previous Combined Limerick/Peach Bottom Emergency Plan.
Changing emergency plan provisions without documentation impacts the NRC's ability to perform its regulatory function and is therefore processed through traditional enforcement as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000 (65 FR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a SLl IV because it involved a failure to meet a requirement not directly related to assessment and notification.
Inspection Report# : 2003004*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : December 01, 2003

Limerick 2
4Q/2003 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Adequately Assess and Manage Risk of Testing the D21 4kV Bus Under-Voltage Relay
The inspector identified a finding of very low safety significance (Green), that is also a non-cited violation of 10 CFR 50.65 (a)(4), because on October 20, 2003, Exelon performed testing on the Unit 2 D21 4 kV bus under-voltage relay without having properly assessed and managed the increase in risk associated with the test. Specifically, Exelon did not establish appropriate actions in the test procedure to ensure D21 bus and D21 EDG availability. The risk was higher than Exelon originally determined since the actions in the test procedure did not ensure that the D21 4 kV bus and D21 EDG would be available. As a result, based on the higher risk, the test should not have been performed with the plant at power.

This issue is greater than minor because it is associated with the human performance attribute (incorrect assumption made in risk determination because operators and technicians actions added to the test procedure were not simple) and adversely affects the objective of the mitigating system cornerstone in that the EDG and associated bus were unavailable during the test and could not respond to certain initiating events. This finding is not suitable for analysis by a Significance Determination Process (SDP) because there is no current SDP to assess the significance of maintenance risk assessment findings. This finding was determined to be of very low safety significance (Green) and not greater than very low safety significance by management review because the performance deficiency did not result in a loss of the system safety function and the length of time that the D21 EDG and bus were unavailable was short (45 min). (Section 1R13)

The inspector identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. Exelon's corrective action for the finding associated with the D12 bus under-voltage relay test performed on August 5, 2003, was not adequate to assure that the associated bus and EDG would be considered available when other bus under-voltage relays were tested. The corrective actions were inadequate because the technical review to support the procedure changes did not adequately evaluate the procedure change against the NUMARC 93-01 standard to ensure the procedure change maintained the EDG and associated bus available.
Inspection Report# : 2003005*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CH-1010
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical

Specification 6.8.1, "Procedures," because the chemistry staff did not follow procedures. Specifically, on several occasions since April 2003, Exelon staff did not perform the required daily sample and analysis of spray pond water and when pH in the spray pond water was outside of the specifications, did not take the actions described in the procedure within the specified time period.

The finding is greater than minor because it is similar to example 4.a " Insignificant Procedural Errors" in Appendix E of NRC Inspection Manual Chapter 0612, "Power Reactor Inspection Reports." By not following the chemistry sampling and analysis procedure, Exelon adversely affected the safety-related 2B RHR heat exchanger, in that, the reliability of the 2B RHR heat exchanger under post-accident conditions was reduced. The finding impacts the Mitigating System Integrity Cornerstone because it is associated with the reliability of the 2B RHR subsystem, a mitigating system.

The inspectors identified that a contributing cause of this finding involved a human performance error because neither a chemistry technician nor the technician's supervisor followed the steps prescribed by procedure CH-1010. (Section 1R15)
Inspection Report# : 2003005*(pdf)*

Significance:  Nov 21, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Develop s Station Blackout Procedure Consistent with 10CFR50.63 Coping Analysis
The team identified a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current Power," because the licensee's procedures used to cope with a station blackout may not have restored a source of alternating current power to the affected unit within one hour. The restoration of power within one hour is an assumption in the station blackout coping analysis used to demonstrate the plant would be able to manage a station blackout of a specified duration by taking credit for certain safe shutdown equipment such as residual heat removal pumps, air compressors, and battery chargers.

This finding is greater than minor because the finding affects the Mitigating System Cornerstone objective of ensuring equipment availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Systems used to mitigate the effects of a station blackout could be adversely effected if a source of alternating current power was not restored to the affected unit within one hour. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent an actual loss of safety function of a train or system, and does not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event.
Inspection Report# : 2003009*(pdf)*

Significance:  Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CH-1010
The inspectors identified a finding of very low safety significance that is also a NCV of TS 6.8.1, "Procedures," because chemistry staff did not follow procedures. Specifically, spray pond water samples were not analyzed for soluble manganese within the required weekly frequency and when manganese in the spray pond water was above 100 parts-per-billion (ppb), the actions specified in the procedure were not taken.

The finding is more than minor because it is similar to example 4.a in App. E of NRC IMC 0612. This finding was determined to have very low safety significance by Phase 1 of the Reactor Inspection Findings for At-Power Situations

Significance Determination Process because the performance deficiency did not result in a loss of safety function and is not potentially risk significant due to a seismic, flood, fire, or severe weather initiating event.

The inspectors also identified that a contributing cause of this finding involved a human performance error because neither a chemistry technician nor the technician's supervisor followed the steps prescribed by the procedure.

Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: FIN Finding
Performing Preventive Maintenance Prior to Required Surveillance Testing of Recirculation Pump Trip Breakers and Safety-Related Battery Chargers
The insp. identified a finding of very low significance (Green) because Exelon's practice of performing preventive maintenance prior to required surveillance testing of recirc pump trip breakers and safety-related battery chargers masked the as-found conditions of these components, and this practice had not been evaluated.

The finding is considered more than minor because it affected the ability to detect component degradation which would adversely impact the reliability of the RPT breakers and battery chargers to respond to initiating events and prevent undesirable consequences. This finding is of very low safety significance because it involved inadequate testing and did not degrade the capability of these components to perform their safety functions.

The inspectors also identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. After the inspectors noted the MSIV preconditioning issue in February 2003, Exelon's corrective action included a review of other outage-related activities for unacceptable preconditioning. Exelon's corrective action was narrow in scope and did not identify the RPT breaker and battery charger preconditioning issues.
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Average Power Range Monitor Operability During Testing
The inspectors identified a finding of very low significance (Green) that is also a non-cited violation of 10 CFR 50, Appendix B, Criterion V "Procedures," because Exelon's procedure governing local power range monitor (LPRM) maintenance did not include provisions to ensure that the associated average power range monitor (APRM) remained operable. Specifically, the procedure did not include steps to ensure the APRM remained within the technical specification required accuracy when changing the LPRM input configuration to the APRM and at the completion of the maintenance.

This finding was determined to have very low safety significance because it did not result in an actual loss of safety function, and it did not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event. (Section 1R19)
Inspection Report# : 2003002*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation

Unexpected Scram Bypass Due to a Degraded Transistor
The inspectors identified a finding of very low significance (Green) that is also a non-cited violation of 10 CFR 50, Appendix "B," Criterion XVI, because Exelon had not implemented adequate measures to preclude repetition of a significant condition adverse to quality, specifically a defective transistor in safety related protection system trip units that resulted in a portion of the reactor protection system being inoperable.

This finding was determined to have very low safety significance because it did not result in an actual loss of safety function, and it did not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event.

The inspectors identified that this finding involved a human performance error because the System Manager performing a review of the test data did not identify that one analog trip unit exceeded the repair criteria. (Section 4OA2)
Inspection Report# : 2003002*(pdf)*

Barrier Integrity

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Meet 10CFR 55.53(fg)(2) When Reactivating Senior Operators to Support Fuel Handling
The inspectors identified a non-cited violation of 10CFR55.53(f)(2) regarding the licensee's method used to reactivate senior operator licenses to support refueling. The operator licenses were reactivated without the required direct supervision being present during the shift under-instruction time.

This finding was determined to be more than minor but of very low safety significance. It is more than minor because it is similar to example 2h in App. E of IMC 0612. The performance deficiency is related to operator license conditions. The performance deficiency involved more than 20% of the senior operator license reactivations to support refueling operations not meeting the requirements of 10CFR55.53(f)(2). Accordingly, the performance deficiency was determined to be of very low safety significance.
Inspection Report# : 2003004*(pdf)*

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Performed Core Alterations Without Maintaining Secondary Containment Integrity
A self-revealing NCV of TS 3.6.5.1.2 was identified because Exelon did not maintain refueling area secondary containment integrity while performing core alterations during a refueling outage.
The finding is more than minor because the issue was associated with the human performance attribute of the Barrier Integrity cornerstone, and it affected the cornerstone objective. The Barrier Integrity cornerstone objective was affected because secondary containment functionality was not maintained when required by TSs. This finding was determined to be of very low safety significance (Green) by NRC IMC 0609, App. G, Shutdown Operations Significance Determination Process. The plant conditions while secondary containment was breached did not require a phase 2 assessment and therefore screened as Green per the Appendix G, Section 1 guidance.
The inspectors also noted that a contributing cause of this finding was related to a human performance error because operators did not properly verify TSs compliance when breaching secondary containment.

Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon's Main Steam Isolation Valve Stroke Time Test Methodology
The inspectors identified a finding of very low significance (Green) that is also a violation of 10 CFR 50 Appendix B, Criterion XI, "Test Control," because Exelon's MSIV stroke time test procedure did not include sufficient steps to assure that, when the MSIVs are in-service in Operational Conditions 1, the MSIV full closure times will meet TS requirements.
The finding was considered more than minor, in that the issue was associated with the Maintain Functionality of Containment Procedure Quality attribute of the Barrier Integrity cornerstone, and it affected the cornerstone objective. The Barrier Integrity cornerstone objective was affected because the inadequate testing procedures adversely affect assurance that the containment would protect the public from radionuclide releases caused by accidents or events. This finding was also associated with the Procedure Quality attribute of the Mitigating Systems cornerstone, and it affected the cornerstone objective. The cornerstone objective was affected because the testing did not ensure the reliability of the MSIV's to respond to initiating events to prevent undesirable consequences.
This finding was determined to have very low safety significance (Green) by Phase 2 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process. This finding was determined to be of very low safety significance because the issue involved inadequate testing and did not degrade the MSIVs capability to perform its safety function. Therefore, no mitigation equipment or sequences in Phase 2 were adversely impacted.
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Dropped New Fuel Bundles
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because maintenance technicians did not follow procedures while performing an inspection of new fuel bundles.

This finding was determined to have very low safety significance because fuel barrier findings screen as Green.

The inspectors identified that this finding involved a human performance error because technicians did not follow a maintenance procedure. Additionally, ineffective supervisory oversight, another human performance factor, contributed to this event. (Section 1R20)
Inspection Report# : 2003002*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: FIN Finding
Main Steam Isolation Valve Surveillance Test Preconditioning
The inspectors identified a finding of very low significance (Green) because Exelon's practice of performing preventative maintenance prior to required surveillance testing of the MSIVs masked the as-found conditions of the valves and this practice had not been evaluated by Exelon.

This finding was determined to be of very low safety significance because the issue involved inadequate testing and did

not degrade the MSIVs capability to perform its safety function. (Section 1R22)
Inspection Report# : 2003002*(pdf)*

Emergency Preparedness

Significance: SL-IV Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Perform a 10 CFR 50.54(q) Review Resulting in Removal of a Provision Without Prior NRC Approval
The inspector identified a SL IV NCV of 10 CFR 50.54(q) because the licensee decreased the effectiveness of its emergency plan in one area by removing a provision to provide volunteer bus drivers to two school districts within the 10 mile Emergency Planning Zone for evacuating students during a radiological event. The change was implemented without NRC approval.
Changing emergency plan provisions without prior NRC approval impacts the NRC's ability to perform its regulatory function and is therefore processed through traditional enforcement as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000 (65 FR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a SL IV violation because it involved a failure to meet a requirement not directly related to assessment and notification. This NCV was also determined to have very low safety significance since Exelon had maintained a list of volunteers that would have been able to perform the function if needed.
Inspection Report# : 2003004*(pdf)*

Significance: SL-IV Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Retain a Record of the 10 CFR 50.54(q) Review of the Deleted Portions of the Emergency Plan
The inspector identified a SL IV non-cited violation of 10 CFR 50.54(q). During the implementation of a new Standard Emergency Plan, Exelon did not retain a record that determined whether a decrease-in-effectiveness had or had not occurred when Exelon generated the new Standard Emergency Plan that deleted portions of the previous Combined Limerick/Peach Bottom Emergency Plan.
Changing emergency plan provisions without documentation impacts the NRC's ability to perform its regulatory function and is therefore processed through traditional enforcement as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000 (65 FR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a SLl IV because it involved a failure to meet a requirement not directly related to assessment and notification.
Inspection Report# : 2003004*(pdf)*

Significance: SL-IV Feb 11, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
10CFR50.54(q) violation for decreasing the effectiveness of the plan by changing EALs that address toxic gas without prior NRC approval
The licensee changed its emergency action level schemes such that there would e a reduction in declarable events as the emphasis shifted from personnel safety to equipment status. The changes were determined to be a decrease in the effectiveness of the emergency plans. Decreases in the effectiveness of an emergency plan must receive NRC review prior to implementation. The changes were implemented without NRC approval.

The finding was determined to be more than minor as its significance was related to the impact it would have on the mobilization of the emregency response organization and preclude offsite agencies from being aware of adverse

conditions on site. The licensee accepted the NRC's position and entered this issue into its corrective action program (Condition Report 139997) and will change the emergency action levels back to the original wording. The implementation of the changes which decreased the effectiveness of the emergency plans, without NRC review, is being treated as a non-cited violation consistent with Section VI.A. of the Enforcement Policy, issued on May 1, 2000 (65 FR 25388). (NCV 50-277; 50-278/03-008-01 and 50-352;50-353/03-006) (Section 1EP4)

Inspection Report# : 2003006*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : March 02, 2004

Limerick 2
1Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Adequately Assess and Manage Risk of Testing the D21 4kV Bus Under-Voltage Relay
The inspector identified a finding of very low safety significance (Green), that is also a non-cited violation of 10 CFR 50.65 (a)(4), because on October 20, 2003, Exelon performed testing on the Unit 2 D21 4 kV bus under-voltage relay without having properly assessed and managed the increase in risk associated with the test. Specifically, Exelon did not establish appropriate actions in the test procedure to ensure D21 bus and D21 EDG availability. The risk was higher than Exelon originally determined since the actions in the test procedure did not ensure that the D21 4 kV bus and D21 EDG would be available. As a result, based on the higher risk, the test should not have been performed with the plant at power.

This issue is greater than minor because it is associated with the human performance attribute (incorrect assumption made in risk determination because operators and technicians actions added to the test procedure were not simple) and adversely affects the objective of the mitigating system cornerstone in that the EDG and associated bus were unavailable during the test and could not respond to certain initiating events. This finding is not suitable for analysis by a Significance Determination Process (SDP) because there is no current SDP to assess the significance of maintenance risk assessment findings. This finding was determined to be of very low safety significance (Green) and not greater than very low safety significance by management review because the performance deficiency did not result in a loss of the system safety function and the length of time that the D21 EDG and bus were unavailable was short (45 min). (Section 1R13)

The inspector identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. Exelon's corrective action for the finding associated with the D12 bus under-voltage relay test performed on August 5, 2003, was not adequate to assure that the associated bus and EDG would be considered available when other bus under-voltage relays were tested. The corrective actions were inadequate because the technical review to support the procedure changes did not adequately evaluate the procedure change against the NUMARC 93-01 standard to ensure the procedure change maintained the EDG and associated bus available.
Inspection Report# : 2003005*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CH-1010
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because the chemistry staff did not follow procedures. Specifically, on several occasions since April 2003, Exelon staff did not perform the required daily sample and analysis of spray pond water and when pH in the spray pond water was outside of the specifications, did not take the actions described in the procedure within the specified time period.

The finding is greater than minor because it is similar to example 4.a " Insignificant Procedural Errors" in Appendix E of NRC Inspection Manual Chapter 0612, "Power Reactor Inspection Reports." By not following the chemistry sampling and analysis procedure, Exelon adversely affected the safety-related 2B RHR heat exchanger, in that, the reliability of the 2B RHR heat exchanger under post-accident conditions was reduced. The finding impacts the Mitigating System Integrity Cornerstone because it is associated with the reliability of the 2B RHR subsystem, a mitigating system.

The inspectors identified that a contributing cause of this finding involved a human performance error because neither a chemistry technician nor the technician's supervisor followed the steps prescribed by procedure CH-1010. (Section 1R15)
Inspection Report# : 2003005*(pdf)*

Significance: G Nov 21, 2003

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Develop s Station Blackout Procedure Consistent with 10CFR50.63 Coping Analysis
The team identified a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current Power," because the licensee's procedures used to cope with a station blackout may not have restored a source of alternating current power to the affected unit within one hour. The restoration of power within one hour is an assumption in the station blackout coping analysis used to demonstrate the plant would be able to manage a station blackout of a specified duration by taking credit for certain safe shutdown equipment such as residual heat removal pumps, air compressors, and battery chargers.

This finding is greater than minor because the finding affects the Mitigating System Cornerstone objective of ensuring equipment availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Systems used to mitigate the effects of a station blackout could be adversely effected if a source of alternating current power was not restored to the affected unit within one hour. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent an actual loss of safety function of a train or system, and does not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event.
Inspection Report# : 2003009*(pdf)*

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CH-1010
The inspectors identified a finding of very low safety significance that is also a NCV of TS 6.8.1, "Procedures," because chemistry staff did not follow procedures. Specifically, spray pond water samples were not analyzed for soluble manganese within the required weekly frequency and when manganese in the spray pond water was above 100 parts-per-billion (ppb), the actions specified in the procedure were not taken.

The finding is more than minor because it is similar to example 4.a in App. E of NRC IMC 0612. This finding was determined to have very low safety significance by Phase 1 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process because the performance deficiency did not result in a loss of safety function and is not potentially risk significant due to a seismic, flood, fire, or severe weather initiating event.

The inspectors also identified that a contributing cause of this finding involved a human performance error because neither a chemistry technician nor the technician's supervisor followed the steps prescribed by the procedure.

Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: FIN Finding
Performing Preventive Maintenance Prior to Required Surveillance Testing of Recirculation Pump Trip Breakers and Safety-Related Battery Chargers
The insp. identified a finding of very low significance (Green) because Exelon's practice of performing preventive maintenance prior to required surveillance testing of recirc pump trip breakers and safety-related battery chargers masked the as-found conditions of these components, and this practice had not been evaluated.

The finding is considered more than minor because it affected the ability to detect component degradation which would adversely impact the reliability of the RPT breakers and battery chargers to respond to initiating events and prevent undesirable consequences. This finding is of very low safety significance because it involved inadequate testing and did not degrade the capability of these components to perform their safety functions.

The inspectors also identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. After the inspectors noted the MSIV preconditioning issue in February 2003, Exelon's corrective action included a review of other outage-related activities for unacceptable preconditioning. Exelon's corrective action was narrow in scope and did not identify the RPT breaker and battery charger preconditioning issues.
Inspection Report# : 2003003*(pdf)*

Barrier Integrity

Significance: G Sep 27, 2003

Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Meet 10CFR 55.53(fg)(2) When Reactivating Senior Operators to Support Fuel Handling
The inspectors identified a non-cited violation of 10CFR55.53(f)(2) regarding the licensee's method used to reactivate senior operator licenses to support refueling. The operator licenses were reactivated without the required direct supervision being present during the shift under-instruction time.

This finding was determined to be more than minor but of very low safety significance. It is more than minor because it is similar to example 2h in App. E of IMC 0612. The performance deficiency is related to operator license conditions. The performance deficiency involved more than 20% of the senior operator license reactivations to support refueling operations not meeting the requirements of 10CFR55.53(f)(2). Accordingly, the performance deficiency was determined to be of very low safety significance.
Inspection Report# : 2003004*(pdf)*

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Performed Core Alterations Without Maintaining Secondary Containment Integrity
A self-revealing NCV of TS 3.6.5.1.2 was identified because Exelon did not maintain refueling area secondary containment integrity while performing core alterations during a refueling outage.
The finding is more than minor because the issue was associated with the human performance attribute of the Barrier Integrity cornerstone, and it affected the cornerstone objective. The Barrier Integrity cornerstone objective was affected because secondary containment functionality was not maintained when required by TSs. This finding was determined to be of very low safety significance (Green) by NRC IMC 0609, App. G, Shutdown Operations Significance Determination Process. The plant conditions while secondary containment was breached did not require a phase 2 assessment and therefore screened as Green per the Appendix G, Section 1 guidance.
The inspectors also noted that a contributing cause of this finding was related to a human performance error because operators did not properly verify TSs compliance when breaching secondary containment.
Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon's Main Steam Isolation Valve Stroke Time Test Methodology
The inspectors identified a finding of very low significance (Green) that is also a violation of 10 CFR 50 Appendix B, Criterion XI, "Test Control," because Exelon's MSIV stroke time test procedure did not include sufficient steps to assure that, when the MSIVs are in-service in Operational Conditions 1, the MSIV full closure times will meet TS requirements.
The finding was considered more than minor, in that the issue was associated with the Maintain Functionality of Containment Procedure Quality attribute of the Barrier Integrity cornerstone, and it affected the cornerstone objective. The Barrier Integrity cornerstone objective was affected because the inadequate testing procedures adversely affect assurance that the containment would protect the public from radionuclide releases caused by accidents or events. This finding was also associated with the Procedure Quality attribute of the Mitigating Systems cornerstone, and it affected the cornerstone objective. The cornerstone objective was affected because the testing did not ensure the reliability of the MSIV's to respond to initiating events to prevent undesirable consequences.
This finding was determined to have very low safety significance (Green) by Phase 2 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process. This finding was determined to be of very low safety significance because the issue involved inadequate testing and did not degrade the MSIVs capability to perform its safety function. Therefore, no mitigation equipment or sequences in Phase 2 were adversely impacted.
Inspection Report# : 2003003*(pdf)*

Emergency Preparedness

Significance: SL-IV Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Perform a 10 CFR 50.54(q) Review Resulting in Removal of a Provision Without Prior NRC Approval
The inspector identified a SL IV NCV of 10 CFR 50.54(q) because the licensee decreased the effectiveness of its emergency plan in one area by removing a provision to provide volunteer bus drivers to two school districts within the 10 mile Emergency Planning Zone for evacuating students during a radiological event. The change was implemented without NRC approval.
Changing emergency plan provisions without prior NRC approval impacts the NRC's ability to perform its regulatory function and is therefore processed through traditional enforcement as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000 (65 FR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a SL IV violation because it involved a failure to meet a requirement not directly related to assessment and notification. This NCV was also determined to have very low safety significance

since Exelon had maintained a list of volunteers that would have been able to perform the function if needed.
Inspection Report# : 2003004*(pdf)*

Significance: SL-IV Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Retain a Record of the 10 CFR 50.54(q) Review of the Deleted Portions of the Emergency Plan
The inspector identified a SL IV non-cited violation of 10 CFR 50.54(q). During the implementation of a new Standard Emergency Plan, Exelon did not retain a record that determined whether a decrease-in-effectiveness had or had not occurred when Exelon generated the new Standard Emergency Plan that deleted portions of the previous Combined Limerick/Peach Bottom Emergency Plan.
Changing emergency plan provisions without documentation impacts the NRC's ability to perform its regulatory function and is therefore processed through traditional enforcement as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000 (65 FR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a SLl IV because it involved a failure to meet a requirement not directly related to assessment and notification.
Inspection Report# : 2003004*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : May 05, 2004

Limerick 2
2Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Emergency Diesel Generator Jacket Water Leak (Section 1R04)
The inspectors identified a finding of very low safety significance that is also a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." Specifically, Exelon did not properly identify and correct a jacket water leak on the D24 emergency diesel generator.

This finding is more than minor because if left uncorrected, it would become a more significant safety concern. The leakage rate did not reach a level that made the D24 emergency diesel generator (EDG) inoperable or unavailable. However, the rapidly increasing rate of leakage, if left uncorrected, could have caused the EDG to be unavailable and inoperable. The issue affected the Mitigating Systems cornerstone. This finding was assessed using Phase 1 of the Significance Determination Process (SDP) for Reactor Inspection Findings for At-Power Situations. The finding was determined to be of very low safety significance (Green), because while the Mitigating System was degraded, there was not an actual loss of safety function, and the finding is not potentially risk significant due to seismic, flood, fire, or severe weather initiating events.

The inspectors identified that a contributing cause of the finding was related to the problem identification and resolution cross-cutting area, in that Operations personnel did not adequately resolve known problems with a D24 emergency diesel generator jacket water leak. (Section 1R04)
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CY-LG-120-1102 (Section 1R15)
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because Exelon staff did not follow procedures. Specifically, when soluble manganese in the spray pond water was above 100 parts-per-billion (ppb), the actions specified in the procedure were not taken.

This finding is more than minor because if left uncorrected, it would adversely impact the reliability of the 2B residual heat removal (RHR) heat exchanger following an accident. By not following the chemistry procedures, the spray pond chemistry would be out of specification for extended periods, increasing the likelihood of operation of the 2B heat exchanger with poor quality cooling water which could cause accelerated corrosion of the heat exchanger tubes. The finding impacts the Mitigating System Integrity Cornerstone because it is associated with the reliability of the 2B RHR subsystem, a mitigating system. This finding is determined to have very low safety significance (Green) by Phase 1 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process because the performance deficiency does not result in a loss of safety function and is not potentially risk significant due to a seismic, flood, fire, or severe weather initiating event.

The inspectors identified that a contributing cause of this finding involved a human performance error because operators did not ensure actions were taken consistent with the 2B RHR heat exchanger operability evaluation and the applicable chemistry procedures. The inspectors also identified that a contributing cause to this finding was related to the cross cutting area of Problem Identification and Resolution. This is the third finding within the last year in which the station did not properly implement chemistry sampling and analysis procedures. (Section 1R15)
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 25, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon did not promptly correct a condition adverse to quality associated with age-related degradation of the 'B' CREFAS system moisture element
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not identify and promptly correct a condition adverse to quality associated with four Unit 2 control rods that were not properly surveillance tested when they were susceptible to friction caused by fuel channel bow.

This finding is more than minor because if left uncorrected, it would become a more significant safety concern. Specifically, there was a potential for the

channel bow degradation to go undetected because the affected control rods were not being tested. The failure to enter this condition adverse to quality in the CAP, for several months, potentially affected the reactor shutdown function of the rod control mitigating system because the operability and reliability of four control rods were not demonstrated by the surveillance testing. The finding was determined to be of very low safety significance, because the control rods passed channel bow surveillance tests in April 2004. (Section 4OA2.a.2.2)
Inspection Report# : 2004006*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Faulty Breaker Charging Spring (Section 1R12)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not take adequate corrective actions for an undersized breaker charging spring found during post maintenance testing in October 2003. As a result, a similar spring in a residual heat removal pump breaker did not properly charge following breaker operation in February 2004.

This finding is more than minor because it affected the Mitigating System Cornerstone objective of maintaining equipment reliability, in that failure of the charging spring to function could inhibit equipment operation by preventing breakers from properly closing causing equipment unavailability. The finding is of very low safety significance, because while equipment reliability was degraded, there was no actual loss of safety function. (Section 1R12)
Inspection Report# : 2004002*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Emergency Diesel Generator Relay (Section 1R15)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not identify and correct a faulty emergency diesel generator (EDG) relay on the D12 and D23 EDGs.

This finding is more than minor because it affected the Mitigating System Cornerstone objective of maintaining equipment reliability, in that intermittent failure of the EDG relay inhibited the ability of the EDG to synchronize and share load with the offsite source as required by Technical Specifications. The finding is of very low safety significance, because while equipment reliability was degraded, there was no actual loss of safety function. (Section 1R15)
Inspection Report# : 2004002*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Adequately Assess and Manage Risk of Testing the D21 4kV Bus Under-Voltage Relay
The inspector identified a finding of very low safety significance (Green), that is also a non-cited violation of 10 CFR 50.65 (a)(4), because on October 20, 2003, Exelon performed testing on the Unit 2 D21 4 kV bus under-voltage relay without having properly assessed and managed the increase in risk associated with the test. Specifically, Exelon did not establish appropriate actions in the test procedure to ensure D21 bus and D21 EDG availability. The risk was higher than Exelon originally determined since the actions in the test procedure did not ensure that the D21 4 kV bus and D21 EDG would be available. As a result, based on the higher risk, the test should not have been performed with the plant at power.

This issue is greater than minor because it is associated with the human performance attribute (incorrect assumption made in risk determination because operators and technicians actions added to the test procedure were not simple) and adversely affects the objective of the mitigating system cornerstone in that the EDG and associated bus were unavailable during the test and could not respond to certain initiating events. This finding is not suitable for analysis by a Significance Determination Process (SDP) because there is no current SDP to assess the significance of maintenance risk assessment findings. This finding was determined to be of very low safety significance (Green) and not greater than very low safety significance by management review because the performance deficiency did not result in a loss of the system safety function and the length of time that the D21 EDG and bus were unavailable was short (45 min). (Section 1R13)

The inspector identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. Exelon's corrective action for the finding associated with the D12 bus under-voltage relay test performed on August 5, 2003, was not adequate to assure that the associated bus and EDG would be considered available when other bus under-voltage relays were tested. The corrective actions were inadequate because the technical review to support the procedure changes did not adequately evaluate the procedure change against the NUMARC 93-01 standard to ensure the procedure change maintained the EDG and associated bus available.
Inspection Report# : 2003005*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CH-1010
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because the chemistry staff did not follow procedures. Specifically, on several occasions since April 2003, Exelon staff did not perform the required

daily sample and analysis of spray pond water and when pH in the spray pond water was outside of the specifications, did not take the actions described in the procedure within the specified time period.

The finding is greater than minor because it is similar to example 4.a " Insignificant Procedural Errors" in Appendix E of NRC Inspection Manual Chapter 0612, "Power Reactor Inspection Reports." By not following the chemistry sampling and analysis procedure, Exelon adversely affected the safety-related 2B RHR heat exchanger, in that, the reliability of the 2B RHR heat exchanger under post-accident conditions was reduced. The finding impacts the Mitigating System Integrity Cornerstone because it is associated with the reliability of the 2B RHR subsystem, a mitigating system.

The inspectors identified that a contributing cause of this finding involved a human performance error because neither a chemistry technician nor the technician's supervisor followed the steps prescribed by procedure CH-1010. (Section 1R15)
Inspection Report# : 2003005*(pdf)*

Significance: G Nov 21, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Develop s Station Blackout Procedure Consistent with 10CFR50.63 Coping Analysis
The team identified a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current Power," because the licensee's procedures used to cope with a station blackout may not have restored a source of alternating current power to the affected unit within one hour. The restoration of power within one hour is an assumption in the station blackout coping analysis used to demonstrate the plant would be able to manage a station blackout of a specified duration by taking credit for certain safe shutdown equipment such as residual heat removal pumps, air compressors, and battery chargers.

This finding is greater than minor because the finding affects the Mitigating System Cornerstone objective of ensuring equipment availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Systems used to mitigate the effects of a station blackout could be adversely effected if a source of alternating current power was not restored to the affected unit within one hour. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent an actual loss of safety function of a train or system, and does not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event.
Inspection Report# : 2003009*(pdf)*

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CH-1010
The inspectors identified a finding of very low safety significance that is also a NCV of TS 6.8.1, "Procedures," because chemistry staff did not follow procedures. Specifically, spray pond water samples were not analyzed for soluble manganese within the required weekly frequency and when manganese in the spray pond water was above 100 parts-per-billion (ppb), the actions specified in the procedure were not taken.

The finding is more than minor because it is similar to example 4.a in App. E of NRC IMC 0612. This finding was determined to have very low safety significance by Phase 1 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process because the performance deficiency did not result in a loss of safety function and is not potentially risk significant due to a seismic, flood, fire, or severe weather initiating event.

The inspectors also identified that a contributing cause of this finding involved a human performance error because neither a chemistry technician nor the technician's supervisor followed the steps prescribed by the procedure.

Inspection Report# : 2003004*(pdf)*

Barrier Integrity

Significance: G Jun 25, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon NF did not identify and promptly correct a condition adverse to quality associated with control rods that were not tested for the effects of channel bow.
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not implement prompt corrective actions for an age-related degradation of a moisture element in the ‘B' train of the control room emergency fresh air supply (CREFAS) system.

This finding is greater than minor because it affected the Barrier Integrity Cornerstone objective of maintaining the availability and reliability of systems used to maintain control room habitability following a reactor accident. This finding is of very low safety significance because it represented a degradation in the radiological barrier function provided for the main control room. (Section 4OA2.b.2.1)
Inspection Report# : 2004006*(pdf)*

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Meet 10CFR 55.53(fg)(2) When Reactivating Senior Operators to Support Fuel Handling
The inspectors identified a non-cited violation of 10CFR55.53(f)(2) regarding the licensee's method used to reactivate senior operator licenses to support refueling. The operator licenses were reactivated without the required direct supervision being present during the shift under-instruction time.

This finding was determined to be more than minor but of very low safety significance. It is more than minor because it is similar to example 2h in App. E of IMC 0612. The performance deficiency is related to operator license conditions. The performance deficiency involved more than 20% of the senior operator license reactivations to support refueling operations not meeting the requirements of 10CFR55.53(f)(2). Accordingly, the performance deficiency was determined to be of very low safety significance.
Inspection Report# : 2003004*(pdf)*

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Performed Core Alterations Without Maintaining Secondary Containment Integrity
A self-revealing NCV of TS 3.6.5.1.2 was identified because Exelon did not maintain refueling area secondary containment integrity while performing core alterations during a refueling outage.
The finding is more than minor because the issue was associated with the human performance attribute of the Barrier Integrity cornerstone, and it affected the cornerstone objective. The Barrier Integrity cornerstone objective was affected because secondary containment functionality was not maintained when required by TSs. This finding was determined to be of very low safety significance (Green) by NRC IMC 0609, App. G, Shutdown Operations Significance Determination Process. The plant conditions while secondary containment was breached did not require a phase 2 assessment and therefore screened as Green per the Appendix G, Section 1 guidance.
The inspectors also noted that a contributing cause of this finding was related to a human performance error because operators did not properly verify TSs compliance when breaching secondary containment.
Inspection Report# : 2003004*(pdf)*

Emergency Preparedness

Significance: SL-IV Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Perform a 10 CFR 50.54(q) Review Resulting in Removal of a Provision Without Prior NRC Approval
The inspector identified a SL IV NCV of 10 CFR 50.54(q) because the licensee decreased the effectiveness of its emergency plan in one area by removing a provision to provide volunteer bus drivers to two school districts within the 10 mile Emergency Planning Zone for evacuating students during a radiological event. The change was implemented without NRC approval.
Changing emergency plan provisions without prior NRC approval impacts the NRC's ability to perform its regulatory function and is therefore processed through traditional enforcement as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000 (65 FR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a SL IV violation because it involved a failure to meet a requirement not directly related to assessment and notification. This NCV was also determined to have very low safety significance since Exelon had maintained a list of volunteers that would have been able to perform the function if needed.
Inspection Report# : 2003004*(pdf)*

Significance: SL-IV Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Retain a Record of the 10 CFR 50.54(q) Review of the Deleted Portions of the Emergency Plan
The inspector identified a SL IV non-cited violation of 10 CFR 50.54(q). During the implementation of a new Standard Emergency Plan, Exelon did not retain a record that determined whether a decrease-in-effectiveness had or had not occurred when Exelon generated the new Standard Emergency Plan that deleted portions of the previous Combined Limerick/Peach Bottom Emergency Plan.
Changing emergency plan provisions without documentation impacts the NRC's ability to perform its regulatory function and is therefore processed through traditional enforcement as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000 (65 FR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a SLl IV because it involved a failure to meet a requirement not directly related to assessment and notification.
Inspection Report# : 2003004*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : September 08, 2004

Limerick 2
3Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Emergency Diesel Generator Jacket Water Leak (Section 1R04)
The inspectors identified a finding of very low safety significance that is also a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." Specifically, Exelon did not properly identify and correct a jacket water leak on the D24 emergency diesel generator.

This finding is more than minor because if left uncorrected, it would become a more significant safety concern. The leakage rate did not reach a level that made the D24 emergency diesel generator (EDG) inoperable or unavailable. However, the rapidly increasing rate of leakage, if left uncorrected, could have caused the EDG to be unavailable and inoperable. The issue affected the Mitigating Systems cornerstone. This finding was assessed using Phase 1 of the Significance Determination Process (SDP) for Reactor Inspection Findings for At-Power Situations. The finding was determined to be of very low safety significance (Green), because while the Mitigating System was degraded, there was not an actual loss of safety function, and the finding is not potentially risk significant due to seismic, flood, fire, or severe weather initiating events.

The inspectors identified that a contributing cause of the finding was related to the problem identification and resolution cross-cutting area, in that Operations personnel did not adequately resolve known problems with a D24 emergency diesel generator jacket water leak. (Section 1R04)
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CY-LG-120-1102 (Section 1R15)
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because Exelon staff did not follow procedures. Specifically, when soluble manganese in the spray pond water was above 100 parts-per-billion (ppb), the actions specified in the procedure were not taken.

This finding is more than minor because if left uncorrected, it would adversely impact the reliability of the 2B residual heat removal (RHR) heat exchanger following an accident. By not following the chemistry procedures, the spray pond chemistry would be out of specification for extended periods, increasing the likelihood of operation of the 2B heat exchanger with poor quality cooling water which could cause accelerated corrosion of the heat exchanger tubes. The finding impacts the Mitigating System Integrity Cornerstone because it is associated with the reliability of the 2B RHR subsystem, a mitigating system. This finding is determined to have very low safety significance (Green) by Phase 1 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process because the performance deficiency does not result in a loss of safety function and is not potentially risk significant due to a seismic, flood, fire, or severe weather initiating event.

The inspectors identified that a contributing cause of this finding involved a human performance error because operators did not ensure actions were taken consistent with the 2B RHR heat exchanger operability evaluation and the applicable chemistry procedures. The inspectors also identified that a contributing cause to this finding was related to the cross cutting area of Problem Identification and Resolution. This is the third finding within the last year in which the station did not properly implement chemistry sampling and analysis procedures. (Section 1R15)
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 25, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon did not promptly correct a condition adverse to quality associated with age-related degradation of the 'B' CREFAS system moisture element
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not identify and promptly correct a condition adverse to quality associated with four Unit 2 control rods that were not properly surveillance tested when they

were susceptible to friction caused by fuel channel bow.

This finding is more than minor because if left uncorrected, it would become a more significant safety concern. Specifically, there was a potential for the channel bow degradation to go undetected because the affected control rods were not being tested. The failure to enter this condition adverse to quality in the CAP, for several months, potentially affected the reactor shutdown function of the rod control mitigating system because the operability and reliability of four control rods were not demonstrated by the surveillance testing. The finding was determined to be of very low safety significance, because the control rods passed channel bow surveillance tests in April 2004. (Section 4OA2.a.2.2)
Inspection Report# : 2004006*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Faulty Breaker Charging Spring (Section 1R12)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not take adequate corrective actions for an undersized breaker charging spring found during post maintenance testing in October 2003. As a result, a similar spring in a residual heat removal pump breaker did not properly charge following breaker operation in February 2004.

This finding is more than minor because it affected the Mitigating System Cornerstone objective of maintaining equipment reliability, in that failure of the charging spring to function could inhibit equipment operation by preventing breakers from properly closing causing equipment unavailability. The finding is of very low safety significance, because while equipment reliability was degraded, there was no actual loss of safety function. (Section 1R12)
Inspection Report# : 2004002*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Emergency Diesel Generator Relay (Section 1R15)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not identify and correct a faulty emergency diesel generator (EDG) relay on the D12 and D23 EDGs.

This finding is more than minor because it affected the Mitigating System Cornerstone objective of maintaining equipment reliability, in that intermittent failure of the EDG relay inhibited the ability of the EDG to synchronize and share load with the offsite source as required by Technical Specifications. The finding is of very low safety significance, because while equipment reliability was degraded, there was no actual loss of safety function. (Section 1R15)
Inspection Report# : 2004002*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Adequately Assess and Manage Risk of Testing the D21 4kV Bus Under-Voltage Relay
The inspector identified a finding of very low safety significance (Green), that is also a non-cited violation of 10 CFR 50.65 (a)(4), because on October 20, 2003, Exelon performed testing on the Unit 2 D21 4 kV bus under-voltage relay without having properly assessed and managed the increase in risk associated with the test. Specifically, Exelon did not establish appropriate actions in the test procedure to ensure D21 bus and D21 EDG availability. The risk was higher than Exelon originally determined since the actions in the test procedure did not ensure that the D21 4 kV bus and D21 EDG would be available. As a result, based on the higher risk, the test should not have been performed with the plant at power.

This issue is greater than minor because it is associated with the human performance attribute (incorrect assumption made in risk determination because operators and technicians actions added to the test procedure were not simple) and adversely affects the objective of the mitigating system cornerstone in that the EDG and associated bus were unavailable during the test and could not respond to certain initiating events. This finding is not suitable for analysis by a Significance Determination Process (SDP) because there is no current SDP to assess the significance of maintenance risk assessment findings. This finding was determined to be of very low safety significance (Green) and not greater than very low safety significance by management review because the performance deficiency did not result in a loss of the system safety function and the length of time that the D21 EDG and bus were unavailable was short (45 min). (Section 1R13)

The inspector identified that a contributing cause of this finding was related to the cross-cutting area of Problem Identification and Resolution. Exelon's corrective action for the finding associated with the D12 bus under-voltage relay test performed on August 5, 2003, was not adequate to assure that the associated bus and EDG would be considered available when other bus under-voltage relays were tested. The corrective actions were inadequate because the technical review to support the procedure changes did not adequately evaluate the procedure change against the NUMARC 93-01 standard to ensure the procedure change maintained the EDG and associated bus available.
Inspection Report# : 2003005*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CH-1010
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because the chemistry staff did not follow procedures. Specifically, on several occasions since April 2003, Exelon staff did not perform the required daily sample and analysis of spray pond water and when pH in the spray pond water was outside of the specifications, did not take the actions described in the procedure within the specified time period.

The finding is greater than minor because it is similar to example 4.a " Insignificant Procedural Errors" in Appendix E of NRC Inspection Manual Chapter 0612, "Power Reactor Inspection Reports." By not following the chemistry sampling and analysis procedure, Exelon adversely affected the safety-related 2B RHR heat exchanger, in that, the reliability of the 2B RHR heat exchanger under post-accident conditions was reduced. The finding impacts the Mitigating System Integrity Cornerstone because it is associated with the reliability of the 2B RHR subsystem, a mitigating system.

The inspectors identified that a contributing cause of this finding involved a human performance error because neither a chemistry technician nor the technician's supervisor followed the steps prescribed by procedure CH-1010. (Section 1R15)
Inspection Report# : 2003005*(pdf)*

Significance: G Nov 21, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Develop s Station Blackout Procedure Consistent with 10CFR50.63 Coping Analysis
The team identified a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current Power," because the licensee's procedures used to cope with a station blackout may not have restored a source of alternating current power to the affected unit within one hour. The restoration of power within one hour is an assumption in the station blackout coping analysis used to demonstrate the plant would be able to manage a station blackout of a specified duration by taking credit for certain safe shutdown equipment such as residual heat removal pumps, air compressors, and battery chargers.

This finding is greater than minor because the finding affects the Mitigating System Cornerstone objective of ensuring equipment availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Systems used to mitigate the effects of a station blackout could be adversely effected if a source of alternating current power was not restored to the affected unit within one hour. The finding is of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent an actual loss of safety function of a train or system, and does not screen as risk significant due to a seismic, fire, flooding, or severe weather initiating event.
Inspection Report# : 2003009*(pdf)*

Barrier Integrity

Significance: G Jun 25, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon NF did not identify and promptly correct a condition adverse to quality associated with control rods that were not tested for the effects of channel bow.
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not implement prompt corrective actions for an age-related degradation of a moisture element in the ‘B' train of the control room emergency fresh air supply (CREFAS) system.

This finding is greater than minor because it affected the Barrier Integrity Cornerstone objective of maintaining the availability and reliability of systems used to maintain control room habitability following a reactor accident. This finding is of very low safety significance because it represented a degradation in the radiological barrier function provided for the main control room. (Section 4OA2.b.2.1)
Inspection Report# : 2004006*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : December 29, 2004

Limerick 2
4Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Emergency Diesel Generator Jacket Water Leak (Section 1R04)
The inspectors identified a finding of very low safety significance that is also a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." Specifically, Exelon did not properly identify and correct a jacket water leak on the D24 emergency diesel generator.

This finding is more than minor because if left uncorrected, it would become a more significant safety concern. The leakage rate did not reach a level that made the D24 emergency diesel generator (EDG) inoperable or unavailable. However, the rapidly increasing rate of leakage, if left uncorrected, could have caused the EDG to be unavailable and inoperable. The issue affected the Mitigating Systems cornerstone. This finding was assessed using Phase 1 of the Significance Determination Process (SDP) for Reactor Inspection Findings for At-Power Situations. The finding was determined to be of very low safety significance (Green), because while the Mitigating System was degraded, there was not an actual loss of safety function, and the finding is not potentially risk significant due to seismic, flood, fire, or severe weather initiating events.

The inspectors identified that a contributing cause of the finding was related to the problem identification and resolution cross-cutting area, in that Operations personnel did not adequately resolve known problems with a D24 emergency diesel generator jacket water leak. (Section 1R04)
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CY-LG-120-1102 (Section 1R15)
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because Exelon staff did not follow procedures. Specifically, when soluble manganese in the spray pond water was above 100 parts-per-billion (ppb), the actions specified in the procedure were not taken.

This finding is more than minor because if left uncorrected, it would adversely impact the reliability of the 2B residual heat removal (RHR) heat exchanger following an accident. By not following the chemistry procedures, the spray pond chemistry would be out of specification for extended periods, increasing the likelihood of operation of the 2B heat exchanger with poor quality cooling water which could cause accelerated corrosion of the heat exchanger tubes. The finding impacts the Mitigating System Integrity Cornerstone because it is associated with the reliability of the 2B RHR subsystem, a mitigating system. This finding is determined to have very low safety significance (Green) by Phase 1 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process because the performance deficiency does not result in a loss of safety function and is not potentially risk significant due to a seismic, flood, fire, or severe weather initiating event.

The inspectors identified that a contributing cause of this finding involved a human performance error because operators did not ensure actions were taken consistent with the 2B RHR heat exchanger operability evaluation and the applicable chemistry procedures. The inspectors also identified that a contributing cause to this finding was related to the cross cutting area of Problem Identification and Resolution. This is the third finding within the last year in which the station did not properly implement chemistry sampling and analysis procedures. (Section 1R15)
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 25, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon did not promptly correct a condition adverse to quality associated with age-related degradation of the 'B' CREFAS system moisture element

The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not implement

prompt corrective actions for an age-related degradation of a moisture element in the ‘B' train of the control room emergency fresh air supply (CREFAS) system.

This finding is greater than minor because it affected the Barrier Integrity Cornerstone objective of maintaining the availability and reliability of systems used to maintain control room habitability following a reactor accident. This finding is of very low safety significance because it represented a degradation in the radiological barrier function provided for the main control room. (Section 4OA2.b.2.1)
Inspection Report# : 2004006*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Faulty Breaker Charging Spring (Section 1R12)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not take adequate corrective actions for an undersized breaker charging spring found during post maintenance testing in October 2003. As a result, a similar spring in a residual heat removal pump breaker did not properly charge following breaker operation in February 2004.

This finding is more than minor because it affected the Mitigating System Cornerstone objective of maintaining equipment reliability, in that failure of the charging spring to function could inhibit equipment operation by preventing breakers from properly closing causing equipment unavailability. The finding is of very low safety significance, because while equipment reliability was degraded, there was no actual loss of safety function. (Section 1R12)
Inspection Report# : 2004002*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Emergency Diesel Generator Relay (Section 1R15)
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not identify and correct a faulty emergency diesel generator (EDG) relay on the D12 and D23 EDGs.

This finding is more than minor because it affected the Mitigating System Cornerstone objective of maintaining equipment reliability, in that intermittent failure of the EDG relay inhibited the ability of the EDG to synchronize and share load with the offsite source as required by Technical Specifications. The finding is of very low safety significance, because while equipment reliability was degraded, there was no actual loss of safety function. (Section 1R15)
Inspection Report# : 2004002*(pdf)*

Barrier Integrity

Significance: G Jun 25, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon NF did not identify and promptly correct a condition adverse to quality associated with control rods that were not tested for the effects of channel bow.
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not identify and promptly correct a condition adverse to quality associated with four Unit 2 control rods that were not properly surveillance tested when they were susceptible to friction caused by fuel channel bow.

This finding is more than minor because if left uncorrected, it would become a more significant safety concern. Specifically, there was a potential for the channel bow degradation to go undetected because the affected control rods were not being tested. The failure to enter this condition adverse to quality in the CAP, for several months, potentially affected the reactor shutdown function of the rod control mitigating system because the operability and reliability of four control rods were not demonstrated by the surveillance testing. The finding was determined to be of very low safety significance, because the control rods passed channel bow surveillance tests in April 2004. (Section 4OA2.a.2.2)
Inspection Report# : 2004006*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : March 09, 2005

Limerick 2
1Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Emergency Diesel Generator Jacket Water Leak (Section 1R04)
The inspectors identified a finding of very low safety significance that is also a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." Specifically, Exelon did not properly identify and correct a jacket water leak on the D24 emergency diesel generator.

This finding is more than minor because if left uncorrected, it would become a more significant safety concern. The leakage rate did not reach a level that made the D24 emergency diesel generator (EDG) inoperable or unavailable. However, the rapidly increasing rate of leakage, if left uncorrected, could have caused the EDG to be unavailable and inoperable. The issue affected the Mitigating Systems cornerstone. This finding was assessed using Phase 1 of the Significance Determination Process (SDP) for Reactor Inspection Findings for At-Power Situations. The finding was determined to be of very low safety significance (Green), because while the Mitigating System was degraded, there was not an actual loss of safety function, and the finding is not potentially risk significant due to seismic, flood, fire, or severe weather initiating events.

The inspectors identified that a contributing cause of the finding was related to the problem identification and resolution cross-cutting area, in that Operations personnel did not adequately resolve known problems with a D24 emergency diesel generator jacket water leak. (Section 1R04)
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Follow Chemistry Procedure CY-LG-120-1102 (Section 1R15)
The inspectors identified a finding of very low safety significance that is also a non-cited violation of Technical Specification 6.8.1, "Procedures," because Exelon staff did not follow procedures. Specifically, when soluble manganese in the spray pond water was above 100 parts-per-billion (ppb), the actions specified in the procedure were not taken.

This finding is more than minor because if left uncorrected, it would adversely impact the reliability of the 2B residual heat removal (RHR) heat exchanger following an accident. By not following the chemistry procedures, the spray pond chemistry would be out of specification for extended periods, increasing the likelihood of operation of the 2B heat exchanger with poor quality cooling water which could cause accelerated corrosion of the heat exchanger tubes. The finding impacts the Mitigating System Integrity Cornerstone because it is associated with the reliability of the 2B RHR subsystem, a mitigating system. This finding is determined to have very low safety significance (Green) by Phase 1 of the Reactor Inspection Findings for At-Power Situations Significance Determination Process because the performance deficiency does not result in a loss of safety function and is not potentially risk significant due to a seismic, flood, fire, or severe weather initiating event.

The inspectors identified that a contributing cause of this finding involved a human performance error because operators did not ensure actions were taken consistent with the 2B RHR heat exchanger operability evaluation and the applicable chemistry procedures. The inspectors also identified that a contributing cause to this finding was related to the cross cutting area of Problem Identification and Resolution. This is the third finding within the last year in which the station did not properly implement chemistry sampling and analysis procedures. (Section 1R15)
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 25, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon did not promptly correct a condition adverse to quality associated with age-related degradation of the 'B' CREFAS system moisture element

The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not implement

prompt corrective actions for an age-related degradation of a moisture element in the ‘B' train of the control room emergency fresh air supply (CREFAS) system.

This finding is greater than minor because it affected the Barrier Integrity Cornerstone objective of maintaining the availability and reliability of systems used to maintain control room habitability following a reactor accident. This finding is of very low safety significance because it represented a degradation in the radiological barrier function provided for the main control room. (Section 4OA2.b.2.1)
Inspection Report# : 2004006*(pdf)*

Barrier Integrity

Significance: G Jun 25, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Exelon NF did not identify and promptly correct a condition adverse to quality associated with control rods that were not tested for the effects of channel bow.
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon did not identify and promptly correct a condition adverse to quality associated with four Unit 2 control rods that were not properly surveillance tested when they were susceptible to friction caused by fuel channel bow.

This finding is more than minor because if left uncorrected, it would become a more significant safety concern. Specifically, there was a potential for the channel bow degradation to go undetected because the affected control rods were not being tested. The failure to enter this condition adverse to quality in the CAP, for several months, potentially affected the reactor shutdown function of the rod control mitigating system because the operability and reliability of four control rods were not demonstrated by the surveillance testing. The finding was determined to be of very low safety significance, because the control rods passed channel bow surveillance tests in April 2004. (Section 4OA2.a.2.2)
Inspection Report# : 2004006*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : June 17, 2005

Limerick 2
2Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate emergency operating procedure for the reactor core isolation cooling system maximum safe operating water level in the pump room
The NRC identified a Green NCV of TS 6.8.1, "Administrative Controls - Procedures," because Exelon did not maintain adequate procedures in that T-103, "Secondary Containment Control," contained an inappropriately high maximum safe operating flooding level for the Unit 1 RCIC room. Limerick revised the T-103 RCIC maximum safe operating flood level from 42 inches to a value of 27 inches.

This finding is more than minor because it affected the Mitigating Systems cornerstone objective of ensuring availability, reliability, and capability of the RCIC system. This finding is of very low safety significance because it did not represent a loss of safety system function, an actual loss of safety function of a single train for greater than its TS allowed outage time, or a total loss of any safety function that contributes to external event initiated core damage sequences. (1R06)
Inspection Report# : 2005003*(pdf)*

Barrier Integrity

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for a Degraded Remote Shutdown Panel Switch
The NRC identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Limerick's staff did not promptly identify and correct a condition adverse to quality associated with failure of a remote shutdown panel switch during surveillance testing. Limerick replaced the defective remote shutdown panel hand switch and performed a satisfactory post maintenance test.

This finding is greater than minor because it was associated with the Barrier Integrity cornerstone attribute of Barrier Performance, and affected the cornerstone objective of ensuring the availability and reliability of components used for containment isolation. This finding is of very low safety significance because it did not represent a degradation of the radiological barrier provided by the control room, spent fuel pool, or standby gas treatment system, did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere, and did not represent an actual open pathway from the containment or an actual reduction in defense-in-depth for atmospheric pressure control or hydrogen control.

The inspectors identified that a contributing cause of the finding is related to the problem evaluation subcategory of the Problem Identification and Resolution cross-cutting area, in that Limerick staff did not adequately assess and correct the cause of a December 2004 remote shutdown panel switch failure. (Section 4AO2)
Inspection Report# : 2005003*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : August 24, 2005

Limerick 2
3Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to scope emergency service water back-up supply to turbine enclosure cooling water into the Maintenance Rule program
The inspectors identified a non-cited violation of 10 CFR 50.65(b)(2)(i) because Exelon did not scope an emergency service water (ESW) valve open function, used in the emergency operating procedures, into its maintenance rule (MR) monitoring program. Exelon did not demonstrate that the valve's performance was effectively controlled through the conduct of appropriate preventative maintenance such that the valve remained capable of performing its intended function. As a result, Exelon did not perform additional corrective actions to determine the cause and correct the condition when the valve failed to open on demand during the last two valve tests in 2002 and 2004. Exelon added the ESW valve open function into the MR program and entered this deficiency into their corrective action program for resolution (IRs 370575 and 370904).

This finding affects the Mitigating Systems Cornerstone because equipment performance problems were such that Exelon could not demonstrate effective control of component performance or condition through preventative maintenance. This finding is more than minor because it is similar to Example 7.d of NRC Inspection Manual Chapter (IMC) 0612 Appendix-E, "Examples of Minor Issues." The finding is of very low safety significance because it did not represent an actual loss of safety function for equipment designated as risk significant, and was not risk significant for external initiating events. (Section 1R12)
Inspection Report# : 2005004*(pdf)*

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate emergency operating procedure for the reactor core isolation cooling system maximum safe operating water level in the pump room
The NRC identified a Green NCV of TS 6.8.1, "Administrative Controls - Procedures," because Exelon did not maintain adequate procedures in that T-103, "Secondary Containment Control," contained an inappropriately high maximum safe operating flooding level for the Unit 1 RCIC room. Limerick revised the T-103 RCIC maximum safe operating flood level from 42 inches to a value of 27 inches.

This finding is more than minor because it affected the Mitigating Systems cornerstone objective of ensuring availability, reliability, and capability of the RCIC system. This finding is of very low safety significance because it did not represent a loss of safety system function, an actual loss of safety function of a single train for greater than its TS allowed outage time, or a total loss of any safety function that contributes to external event initiated core damage sequences. (1R06)
Inspection Report# : 2005003*(pdf)*

Barrier Integrity

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for a Degraded Remote Shutdown Panel Switch
The NRC identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Limerick's staff did not promptly identify and correct a condition adverse to quality associated with failure of a remote shutdown panel switch during surveillance testing. Limerick replaced the defective remote shutdown panel hand switch and performed a satisfactory post maintenance test.

This finding is greater than minor because it was associated with the Barrier Integrity cornerstone attribute of Barrier Performance, and affected

the cornerstone objective of ensuring the availability and reliability of components used for containment isolation. This finding is of very low safety significance because it did not represent a degradation of the radiological barrier provided by the control room, spent fuel pool, or standby gas treatment system, did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere, and did not represent an actual open pathway from the containment or an actual reduction in defense-in-depth for atmospheric pressure control or hydrogen control.

The inspectors identified that a contributing cause of the finding is related to the problem evaluation subcategory of the Problem Identification and Resolution cross-cutting area, in that Limerick staff did not adequately assess and correct the cause of a December 2004 remote shutdown panel switch failure. (Section 4AO2)
Inspection Report# : 2005003*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : November 30, 2005

Limerick 2
4Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to scope emergency service water back-up supply to turbine enclosure cooling water into the Maintenance Rule program
The inspectors identified a non-cited violation of 10 CFR 50.65(b)(2)(i) because Exelon did not scope an emergency service water (ESW) valve open function, used in the emergency operating procedures, into its maintenance rule (MR) monitoring program. Exelon did not demonstrate that the valve's performance was effectively controlled through the conduct of appropriate preventative maintenance such that the valve remained capable of performing its intended function. As a result, Exelon did not perform additional corrective actions to determine the cause and correct the condition when the valve failed to open on demand during the last two valve tests in 2002 and 2004. Exelon added the ESW valve open function into the MR program and entered this deficiency into their corrective action program for resolution (IRs 370575 and 370904).

This finding affects the Mitigating Systems Cornerstone because equipment performance problems were such that Exelon could not demonstrate effective control of component performance or condition through preventative maintenance. This finding is more than minor because it is similar to Example 7.d of NRC Inspection Manual Chapter (IMC) 0612 Appendix-E, "Examples of Minor Issues." The finding is of very low safety significance because it did not represent an actual loss of safety function for equipment designated as risk significant, and was not risk significant for external initiating events. (Section 1R12)
Inspection Report# : 2005004*(pdf)*

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate emergency operating procedure for the reactor core isolation cooling system maximum safe operating water level in the pump room
The NRC identified a Green NCV of TS 6.8.1, "Administrative Controls - Procedures," because Exelon did not maintain adequate procedures in that T-103, "Secondary Containment Control," contained an inappropriately high maximum safe operating flooding level for the Unit 1 RCIC room. Limerick revised the T-103 RCIC maximum safe operating flood level from 42 inches to a value of 27 inches.

This finding is more than minor because it affected the Mitigating Systems cornerstone objective of ensuring availability, reliability, and capability of the RCIC system. This finding is of very low safety significance because it did not represent a loss of safety system function, an actual loss of safety function of a single train for greater than its TS allowed outage time, or a total loss of any safety function that contributes to external event initiated core damage sequences. (1R06)
Inspection Report# : 2005003*(pdf)*

Barrier Integrity

Significance: G Jun 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for a Degraded Remote Shutdown Panel Switch
The NRC identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Limerick's staff did not promptly identify and correct a condition adverse to quality associated with failure of a remote shutdown panel switch during surveillance testing. Limerick replaced the defective remote shutdown panel hand switch and performed a satisfactory post maintenance test.

This finding is greater than minor because it was associated with the Barrier Integrity cornerstone attribute of Barrier Performance, and affected

the cornerstone objective of ensuring the availability and reliability of components used for containment isolation. This finding is of very low safety significance because it did not represent a degradation of the radiological barrier provided by the control room, spent fuel pool, or standby gas treatment system, did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere, and did not represent an actual open pathway from the containment or an actual reduction in defense-in-depth for atmospheric pressure control or hydrogen control.

The inspectors identified that a contributing cause of the finding is related to the problem evaluation subcategory of the Problem Identification and Resolution cross-cutting area, in that Limerick staff did not adequately assess and correct the cause of a December 2004 remote shutdown panel switch failure. (Section 4AO2)
Inspection Report# : 2005003*(pdf)*

Emergency Preparedness

Significance: G Nov 15, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Emergency Response Organization Exercise Performance Issue
The inspectors identified that the Exelon exercise evaluators failed to identify an ERO exercise performance issue that had the apparent effect of unnecessarily prolonging a simulated radiological release to the environment. Specifically, the exercise scenario presented conditions of fuel damage and the failure of one MSIV to close. Operators inappropriately opted to de-pressurize the reactor using the main condenser bypass valves rather than the SRVs. This created a pathway that allowed radiation from the failed fuel to be released to the environment.
Inspection Report# : 2005009*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : March 03, 2006

Limerick 2
1Q/2006 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to scope emergency service water back-up supply to turbine enclosure cooling water into the Maintenance Rule program
The inspectors identified a non-cited violation of 10 CFR 50.65(b)(2)(i) because Exelon did not scope an emergency service water (ESW) valve open function, used in the emergency operating procedures, into its maintenance rule (MR) monitoring program. Exelon did not demonstrate that the valve's performance was effectively controlled through the conduct of appropriate preventative maintenance such that the valve remained capable of performing its intended function. As a result, Exelon did not perform additional corrective actions to determine the cause and correct the condition when the valve failed to open on demand during the last two valve tests in 2002 and 2004. Exelon added the ESW valve open function into the MR program and entered this deficiency into their corrective action program for resolution (IRs 370575 and 370904).

This finding affects the Mitigating Systems Cornerstone because equipment performance problems were such that Exelon could not demonstrate effective control of component performance or condition through preventative maintenance. This finding is more than minor because it is similar to Example 7.d of NRC Inspection Manual Chapter (IMC) 0612 Appendix-E, "Examples of Minor Issues." The finding is of very low safety significance because it did not represent an actual loss of safety function for equipment designated as risk significant, and was not risk significant for external initiating events. (Section 1R12)
Inspection Report# : 2005004*(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Nov 15, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Emergency Response Organization Exercise Performance Issue
The inspectors identified that the Exelon exercise evaluators failed to identify an ERO exercise performance issue that had the apparent effect of unnecessarily prolonging a simulated radiological release to the environment. Specifically, the exercise scenario presented conditions of fuel damage and the failure of one MSIV to close. Operators inappropriately opted to de-pressurize the reactor using the main condenser bypass valves rather than the SRVs. This created a pathway that allowed radiation from the failed fuel to be released to the environment.
Inspection Report# : 2005009*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : May 25, 2006

Limerick 2
2Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 12, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Unit 2 Core Alterations Without Audible Source Range Monitor Alarms
A self-revealing NCV was identified for the licensee's failure to comply with Technical Specification (TS) 3.9.2, "Instrumentation." Plant operations staff inappropriately started core alterations after the loss of all Unit 2 source range monitor audible alarms. Core alterations were stopped when Exelon management was informed of the problem. The source range monitor audible alarm was fixed prior to moving fuel in the reactor and this issue was entered into Exelon's corrective action program.

This finding is greater than minor because it affected the Initiating Events cornerstone objective of limiting the likelihood of those events that challenge critical safety functions during shutdown conditions. This finding is of very low safety significance because it did not increase the likelihood of a loss of reactor coolant system inventory, it did not degrade the ability to terminate a leak or add inventory to the reactor coolant system, and it did not degrade the ability to recover decay heat removal capability if lost.
Inspection Report# : 2006002*(pdf)*

Mitigating Systems

Significance: G Jun 23, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon's actions to correct a Residual Heat Removal (RHR) system procedure deficiency, i
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to implement effective corrective actions to correct a residual heat removal (RHR) system procedure deficiency. Specifically, a procedure change, implemented following a March 2003 high pressure condition, was ineffective in eliminating the potential for a high pressure condition (water hammer) in the RHR system, when placing the system inservice for alternate decay heat removal in May 2006. The licensee entered this deficiency into their corrective action program for resolution.

This finding is greater than minor because if left uncorrected, it would become a more significant safety concern. The finding was determined to be of very low safety significance in accordance with the shutdown SDP, because it did not increase the likelihood of a loss of reactor coolant system (RCS) inventory, it did not result in an inadvertent change in RCS temperature due to a loss of RHR, it did not result in an inadvertent RCS pressurization, and it did not degrade the ability to recover decay heat removal capability if lost.

Inspection Report# : 2006006*(pdf)*

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to scope emergency service water back-up supply to turbine enclosure cooling water into the Maintenance Rule program
The inspectors identified a non-cited violation of 10 CFR 50.65(b)(2)(i) because Exelon did not scope an emergency service water (ESW) valve open function, used in the emergency operating procedures, into its maintenance rule (MR) monitoring program. Exelon did not demonstrate that the valve's performance was effectively controlled through the conduct of appropriate preventative maintenance such that the valve remained capable of performing its intended function. As a result, Exelon did not perform additional corrective actions to determine the cause and correct the condition when the valve failed to open on demand during the last two valve tests in 2002 and 2004. Exelon added the ESW valve open function into the MR program and entered this deficiency into their corrective action program for resolution (IRs 370575 and 370904).

This finding affects the Mitigating Systems Cornerstone because equipment performance problems were such that Exelon could not demonstrate effective control of component performance or condition through preventative maintenance. This finding is more than minor because it is similar to Example 7.d of NRC Inspection Manual Chapter (IMC) 0612 Appendix-E, "Examples of Minor Issues." The finding is of very low safety significance because it did not represent an actual loss of safety function for equipment designated as risk significant, and was not risk significant for external initiating events. (Section 1R12)

Inspection Report# : 2005004*(pdf)*

Barrier Integrity

Significance: G Jun 27, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Annual Operating Test Administered at Limerick
The inspectors identified a Green non-cited violation (NCV) of 10CFR55.59 (a)(2)(ii) for an inadequate annual operating test that was administered at Limerick. Exelon procedures and commitments made by the licensee in 1991 require questions on job performance measures (JPMs) to explore the differences, if any, in task performance between Limerick and Peach Bottom. At least three of the five JPMs had significant differences in the way the task is performed at Limerick versus the same task at Peach Bottom. These three JPMs should have had questions to explore these differences, but did not. Exelon has entered this issue into their corrective action program for resolution.

The inspectors determined that the inadequate annual operating test administered at Limerick was more than minor because it was associated with the human performance attribute and affected the barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radio nuclide releases caused by accidents or events. The finding is of very low safety significance (Green) because the inadequate annual operating test did not have an adverse impact on operator actions such that safety related equipment was made inoperable during normal operations or in response to a plant transient.
Inspection Report# : 2006003*(pdf)*

Emergency Preparedness

Significance: G Nov 15, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Emergency Response Organization Exercise Performance Issue
The inspectors identified that the Exelon exercise evaluators failed to identify an ERO exercise performance issue that had the apparent effect of unnecessarily prolonging a simulated radiological release to the environment. Specifically, the exercise scenario presented conditions of fuel damage and the failure of one MSIV to close. Operators inappropriately opted to de-pressurize the reactor using the main condenser bypass valves rather than the SRVs. This created a pathway that allowed radiation from the failed fuel to be released to the environment.
Inspection Report# : 2005009*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Jun 23, 2006
Identified By: NRC

Item Type: FIN Finding

Identification and Resolution of Problems

The team identified that Exelon was effectively implementing the corrective action program at the Limerick Generating Station. Exelon staff was routinely effective at identifying discrepant conditions at an appropriate threshold and entering them into the corrective action program. Identified issues were typically prioritized appropriately and were properly evaluated commensurate with the potential safety significance. The evaluations of issues identified the causes of the problem, the extent-of-condition, and provided for corrective actions appropriate to address the causes. Corrective actions were routinely implemented in a timely manner. The majority of the corrective actions reviewed were fully effective. Audits and self-assessments identified adverse conditions and negative trends, and were generally self-critical and consistent with the team's findings. Operating experience usage was also found to be effective. The team identified a few minor examples where the problem identification and corrective action aspects of the corrective action program were not fully effective. The team also identified one greater than minor example where corrective actions were ineffective regarding a residual heat exchanger procedure revision. Exelon took prompt actions to address the issues identified by the team.
Inspection Report# : 2006006*(pdf)*

Last modified : August 25, 2006

Limerick 2
3Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 12, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Unit 2 Core Alterations Without Audible Source Range Monitor Alarms
A self-revealing NCV was identified for the licensee's failure to comply with Technical Specification (TS) 3.9.2, "Instrumentation." Plant operations staff inappropriately started core alterations after the loss of all Unit 2 source range monitor audible alarms. Core alterations were stopped when Exelon management was informed of the problem. The source range monitor audible alarm was fixed prior to moving fuel in the reactor and this issue was entered into Exelon's corrective action program.

This finding is greater than minor because it affected the Initiating Events cornerstone objective of limiting the likelihood of those events that challenge critical safety functions during shutdown conditions. This finding is of very low safety significance because it did not increase the likelihood of a loss of reactor coolant system inventory, it did not degrade the ability to terminate a leak or add inventory to the reactor coolant system, and it did not degrade the ability to recover decay heat removal capability if lost.
Inspection Report# : 2006002*(pdf)*

Mitigating Systems

Significance: G Jun 23, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon's actions to correct a Residual Heat Removal (RHR) system procedure deficiency, i
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to implement effective corrective actions to correct a residual heat removal (RHR) system procedure deficiency. Specifically, a procedure change, implemented following a March 2003 high pressure condition, was ineffective in eliminating the potential for a high pressure condition (water hammer) in the RHR system, when placing the system inservice for alternate decay heat removal in May 2006. The licensee entered this deficiency into their corrective action program for resolution.

This finding is greater than minor because if left uncorrected, it would become a more significant safety concern. The finding was determined to be of very low safety significance in accordance with the shutdown SDP, because it did not increase the likelihood of a loss of reactor coolant system (RCS) inventory, it did not result in an inadvertent change in RCS temperature due to a loss of RHR, it did not result in an inadvertent RCS pressurization, and it did not degrade the ability to recover decay heat removal capability if lost.

Inspection Report# : 2006006*(pdf)*

Barrier Integrity

Significance: G Jun 27, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Annual Operating Test Administered at Limerick
The inspectors identified a Green non-cited violation (NCV) of 10CFR55.59 (a)(2)(ii) for an inadequate annual operating test that was administered at Limerick. Exelon procedures and commitments made by the licensee in 1991 require questions on job performance measures (JPMs) to explore the differences, if any, in task performance between Limerick and Peach Bottom. At least three of the five JPMs had significant differences in the way the task is performed at Limerick versus the same task at Peach Bottom. These three JPMs should have had questions to explore these differences, but did not. Exelon has entered this issue into their corrective action program for resolution.

The inspectors determined that the inadequate annual operating test administered at Limerick was more than minor because it was associated with the human performance attribute and affected the barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radio nuclide releases caused by accidents or events. The finding is of very low safety significance (Green) because the inadequate annual operating test did not have an adverse impact on operator actions such that safety related equipment was made inoperable during normal operations or in response to a plant transient.
Inspection Report# : 2006003*(pdf)*

Emergency Preparedness

Significance: G Nov 15, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Emergency Response Organization Exercise Performance Issue
The inspectors identified that the Exelon exercise evaluators failed to identify an ERO exercise performance issue that had the apparent effect of unnecessarily prolonging a simulated radiological release to the environment. Specifically, the exercise scenario presented conditions of fuel damage and the failure of one MSIV to close. Operators inappropriately opted to de-pressurize the reactor using the main condenser bypass valves rather than the SRVs. This created a pathway that allowed radiation from the failed fuel to be released to the environment.
Inspection Report# : 2005009*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Jun 23, 2006
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team identified that Exelon was effectively implementing the corrective action program at the Limerick Generating Station. Exelon staff was routinely effective at identifying discrepant conditions at an appropriate threshold and entering them into the corrective action program. Identified issues were typically prioritized appropriately and were properly evaluated commensurate with the potential safety significance. The evaluations of issues identified the causes of the problem, the extent-of-condition, and provided for corrective actions appropriate to address the causes. Corrective actions were routinely implemented in a timely manner. The majority of the corrective actions reviewed were fully effective. Audits and self-assessments identified adverse conditions and negative trends, and were generally self-critical and consistent with the team's findings. Operating experience usage was also found to be effective. The team identified a few minor examples where the problem identification and corrective action aspects of the corrective action program were not fully effective. The team also identified one greater than minor example where corrective actions were ineffective regarding a residual heat exchanger procedure revision. Exelon took prompt actions to address the issues identified by the team.
Inspection Report# : 2006006*(pdf)*

Last modified : December 21, 2006

Limerick 2
4Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 12, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Unit 2 Core Alterations Without Audible Source Range Monitor Alarms
A self-revealing NCV was identified for the licensee's failure to comply with Technical Specification (TS) 3.9.2, "Instrumentation." Plant operations staff inappropriately started core alterations after the loss of all Unit 2 source range monitor audible alarms. Core alterations were stopped when Exelon management was informed of the problem. The source range monitor audible alarm was fixed prior to moving fuel in the reactor and this issue was entered into Exelon's corrective action program.

This finding is greater than minor because it affected the Initiating Events cornerstone objective of limiting the likelihood of those events that challenge critical safety functions during shutdown conditions. This finding is of very low safety significance because it did not increase the likelihood of a loss of reactor coolant system inventory, it did not degrade the ability to terminate a leak or add inventory to the reactor coolant system, and it did not degrade the ability to recover decay heat removal capability if lost.
Inspection Report# : 2006002 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform timely corrective actions for a revision to an Offsite Electrical Power Voltage Calculation
The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion XVI, "Corrective Actions," because a condition adverse to quality related to a non-conservative offsite electrical voltage calculation was identified by Exelon in March 2005, but was not promptly corrected. The untimely corrective actions contributed to a missed Technical Specification limiting condition for operation for the required offsite electrical power supplies for Units 1 and 2 in July 2006. Exelon completed a revision to the electrical grid voltage calculation, in September 2006, and adjusted the safeguards transformer tap changer settings to prevent a potential loss of offsite electrical power for a postulated single Unit trip in conjunction with a loss of coolant accident event. Exelon has entered this issue into their corrective action program for resolution.

The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation, conducted after determining that a Phase 2 analysis was not appropriate for this issue. Phase 1 of the SDP screened the issue as needing further evaluation because the finding results in the offsite power safety function being inoperable for longer than its TS limiting condition of operation. The Phase 3 analysis used the Limerick SPAR model, assuming that, for a two day period, any LOCA initiating event would also cause a loss of offsite power. The SPAR model identified a core damage increase that was several orders of magnitude below the 1 in 10,000,000 year range (E-7). This very small increase was driven by the low frequency of LOCA initiating events and the short exposure time. The dominate core damage sequence, given a LOCA without offsite power, was a failure of all EDGs due to a common cause.

This issue has a cross-cutting aspect in the Problem Identification and Resolution area for corrective action program. Specifically, the voltage regulation study calculation was not revised in a timely manner.
Inspection Report# : 2006005 *(pdf)*

Significance: G Jun 23, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon's actions to correct a Residual Heat Removal (RHR) system procedure deficiency, i
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to implement effective corrective actions to correct a residual heat removal (RHR) system procedure deficiency. Specifically, a procedure change, implemented following a March 2003 high pressure condition, was ineffective in eliminating the potential for a high pressure condition (water hammer) in the RHR system, when placing the system inservice for alternate decay heat removal in May 2006. The licensee entered this deficiency into their corrective action program for resolution.

This finding is greater than minor because if left uncorrected, it would become a more significant safety concern. The finding was determined to be of very low safety significance in accordance with the shutdown SDP, because it did not increase the likelihood of a loss of reactor coolant system (RCS) inventory, it did not result in an inadvertent change in RCS temperature due to a loss of RHR, it did not result in an inadvertent RCS pressurization, and it did not degrade the ability to recover decay heat removal capability if lost.

Inspection Report# : 2006006 *(pdf)*

Barrier Integrity

Significance: G Jun 27, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Annual Operating Test Administered at Limerick
The inspectors identified a Green non-cited violation (NCV) of 10CFR55.59 (a)(2)(ii) for an inadequate annual operating test that was administered at Limerick. Exelon procedures and commitments made by the licensee in 1991 require questions on job performance measures (JPMs) to explore the differences, if any, in task performance between Limerick and Peach Bottom. At least three of the five JPMs had significant differences in the way the task is performed at Limerick versus the same task at Peach Bottom. These three JPMs should have had questions to explore these differences, but did not. Exelon has entered this issue into their corrective action program for resolution.

The inspectors determined that the inadequate annual operating test administered at Limerick was more than minor because it was associated with the human performance attribute and affected the barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radio nuclide releases caused by accidents or events. The finding is of very low safety significance (Green) because the inadequate annual operating test did not have an adverse impact on operator actions such that safety related equipment was made inoperable during normal operations or in response to a plant transient.
Inspection Report# : 2006003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Jun 23, 2006
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team identified that Exelon was effectively implementing the corrective action program at the Limerick Generating Station. Exelon staff was routinely effective at identifying discrepant conditions at an appropriate threshold and entering them into the corrective action program. Identified issues were typically prioritized appropriately and were properly evaluated commensurate with the potential safety significance. The evaluations of issues identified the causes of the problem, the extent-of-condition, and provided for corrective actions appropriate to address the causes. Corrective actions were routinely implemented in a timely manner. The majority of the corrective actions reviewed were fully effective. Audits and self-assessments identified adverse conditions and negative trends, and were generally self-critical and consistent with the team's findings. Operating experience usage was also found to be effective. The team identified a few minor examples where the problem identification and corrective action aspects of the corrective action program were not fully effective. The team also identified one greater than minor example where corrective actions were ineffective regarding a residual heat exchanger procedure revision. Exelon took prompt actions to address the issues identified by the team.
Inspection Report# : 2006006 *(pdf)*

Last modified : March 01, 2007

Limerick 2
1Q/2007 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform timely corrective actions for a revision to an Offsite Electrical Power Voltage Calculation
The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion XVI, "Corrective Actions," because a condition adverse to quality related to a non-conservative offsite electrical voltage calculation was identified by Exelon in March 2005, but was not promptly corrected. The untimely corrective actions contributed to a missed Technical Specification limiting condition for operation for the required offsite electrical power supplies for Units 1 and 2 in July 2006. Exelon completed a revision to the electrical grid voltage calculation, in September 2006, and adjusted the safeguards transformer tap changer settings to prevent a potential loss of offsite electrical power for a postulated single Unit trip in conjunction with a loss of coolant accident event. Exelon has entered this issue into their corrective action program for resolution.

The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation, conducted after determining that a Phase 2 analysis was not appropriate for this issue. Phase 1 of the SDP screened the issue as needing further evaluation because the finding results in the offsite power safety function being inoperable for longer than its TS limiting condition of operation. The Phase 3 analysis used the Limerick SPAR model, assuming that, for a two day period, any LOCA initiating event would also cause a loss of offsite power. The SPAR model identified a core damage increase that was several orders of magnitude below the 1 in 10,000,000 year range (E-7). This very small increase was driven by the low frequency of LOCA initiating events and the short exposure time. The dominate core damage sequence, given a LOCA without offsite power, was a failure of all EDGs due to a common cause.

This issue has a cross-cutting aspect in the Problem Identification and Resolution area for corrective action program. Specifically, the voltage regulation study calculation was not revised in a timely manner.
Inspection Report# : 2006005 *(pdf)*

Significance: G Jun 23, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon's actions to correct a Residual Heat Removal (RHR) system procedure deficiency, i
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to implement effective corrective actions to correct a residual heat removal (RHR) system procedure deficiency. Specifically, a procedure change, implemented following a March 2003 high pressure condition, was ineffective in eliminating the potential for a high pressure condition (water hammer) in the RHR system, when placing the system inservice for alternate decay heat removal in May 2006. The licensee entered this deficiency into their corrective action program for resolution.

This finding is greater than minor because if left uncorrected, it would become a more significant safety concern. The finding was determined to be of very low safety significance in accordance with the shutdown SDP, because it did not increase the likelihood of a loss of reactor coolant system (RCS) inventory, it did not result in an inadvertent change in RCS temperature due to a loss of RHR, it did not result in an inadvertent RCS pressurization, and it did not degrade the ability to recover decay heat removal capability if lost.

Inspection Report# : 2006006 *(pdf)*

Barrier Integrity

Significance: G Jun 27, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Annual Operating Test Administered at Limerick
The inspectors identified a Green non-cited violation (NCV) of 10CFR55.59 (a)(2)(ii) for an inadequate annual operating test that was administered at Limerick. Exelon procedures and commitments made by the licensee in 1991 require questions on job performance measures (JPMs) to explore the differences, if any, in task performance between Limerick and Peach Bottom. At least three of the five JPMs had significant differences in the way the task is performed at Limerick versus the same task at Peach Bottom. These three JPMs should have had questions to explore these differences, but did not. Exelon has entered this issue into their corrective action program for resolution.

The inspectors determined that the inadequate annual operating test administered at Limerick was more than minor because it was associated with the human performance attribute and affected the barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radio nuclide releases caused by accidents or events. The finding is of very low safety significance (Green) because the inadequate annual operating test did not have an adverse impact on operator actions such that safety related equipment was made inoperable during normal operations or in response to a plant transient.
Inspection Report# : 2006003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Jun 23, 2006
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team identified that Exelon was effectively implementing the corrective action program at the Limerick Generating Station. Exelon staff was routinely effective at identifying discrepant conditions at an appropriate threshold and entering

them into the corrective action program. Identified issues were typically prioritized appropriately and were properly evaluated commensurate with the potential safety significance. The evaluations of issues identified the causes of the problem, the extent-of-condition, and provided for corrective actions appropriate to address the causes. Corrective actions were routinely implemented in a timely manner. The majority of the corrective actions reviewed were fully effective. Audits and self-assessments identified adverse conditions and negative trends, and were generally self-critical and consistent with the team's findings. Operating experience usage was also found to be effective. The team identified a few minor examples where the problem identification and corrective action aspects of the corrective action program were not fully effective. The team also identified one greater than minor example where corrective actions were ineffective regarding a residual heat exchanger procedure revision. Exelon took prompt actions to address the issues identified by the team.
Inspection Report# : 2006006 *(pdf)*

Last modified : June 01, 2007

Limerick 2
2Q/2007 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Apr 24, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate HPCI/RCIC Flow Controller Tuning Procedure
The inspectors identified a Green, self-revealing, non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion V, "Instructions Procedures and Drawings," due to an inadequate maintenance procedure for flow controller settings for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) systems which resulted in severe system flow oscillations during vessel injection following a reactor scram.

This finding is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone whose objective is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The performance deficiency associated with this event is an inadequate maintenance procedure that resulted in HPCI and RCIC flow oscillations during reactor vessel injection. Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRCs regulatory function, and was not the result of any willful violation of NRC requirements or Exelon procedures. The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation.

This issue has a cross-cutting aspect in the Human Performance area for resources. Specifically, the HPCI/RCIC flow controller tuning procedure did not specify the acceptable values to prevent flow oscillations.

Inspection Report# : 2007003 *(pdf)*

Significance: G Dec 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform timely corrective actions for a revision to an Offsite Electrical Power Voltage Calculation
The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion XVI, “Corrective Actions,” because a condition adverse to quality related to a non-conservative offsite electrical voltage calculation was identified by Exelon in March 2005, but was not promptly corrected. The untimely corrective actions contributed to a missed Technical Specification limiting condition for operation for the required offsite electrical power supplies for Units 1 and 2 in July 2006. Exelon completed a revision to the electrical grid voltage calculation, in September 2006, and adjusted the safeguards transformer tap changer settings to prevent a potential loss of offsite electrical power for a postulated single Unit trip in conjunction with a loss of coolant accident event. Exelon has entered this issue into their corrective action program for resolution.

The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation, conducted after determining that a Phase 2 analysis was not appropriate for this issue. Phase 1 of the SDP screened the issue as needing further evaluation because the finding results in the offsite power safety function being inoperable for longer than its TS limiting condition of operation. The Phase 3 analysis used the Limerick SPAR model, assuming that, for a two day period, any LOCA initiating event would also cause a loss of offsite power. The SPAR model identified a core damage increase that was several orders of magnitude below the 1 in 10,000,000 year range (E-7). This very small increase was driven by the low frequency of LOCA initiating events and the short

exposure time. The dominate core damage sequence, given a LOCA without offsite power, was a failure of all EDGs due to a common cause.

This issue has a cross-cutting aspect in the Problem Identification and Resolution area for corrective action program. Specifically, the voltage regulation study calculation was not revised in a timely manner.
Inspection Report# : 2006005 *(pdf)*

Barrier Integrity

Significance: G Mar 10, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Clearance Results in Opening of the Scram Discharge Vent Drain Valves
The inspectors identified a green, self-revealing, non-cited violation of Technical Specification 6.8, "Procedures and Programs," due to an inadequate safety tagging clearance which resulted in inadvertently opening the scram discharge volume vent and drain valves in hot shutdown with a full scram signal inserted, valves that were part of the reactor coolant system pressure boundary. Station personnel discovered the condition and closed the SDV vent and drain valves, stopping the source of water. Exelon entered this issue into their corrective action program for resolution.

The finding is more than minor because it affects the reactor coolant system (RCS) equipment and barrier performance attribute of the Barrier Integrity cornerstone whose objective is to provide reasonable assurance that physical design barriers protect the public from radionuclide releases. This finding is of very low safety significance because it did not result in exceeding the Technical Specification limit for identified reactor coolant system leakage and would not have likely affected other mitigation systems resulting in a total loss of their safety function. The reactor was already shutdown and depressurized to 25 psig, with decay heat removal to the condenser, prior to the event and thus did not increase the chance of a loss of coolant accident (LOCA). This issue has a human performance cross-cutting aspect in the area of work control because station personnel did not appropriately coordinate the safety tagging work activity.
Inspection Report# : 2007002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : August 24, 2007

Limerick 2
3Q/2007 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Apr 24, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate HPCI/RCIC Flow Controller Tuning Procedure
The inspectors identified a Green, self-revealing, non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion V, "Instructions Procedures and Drawings," due to an inadequate maintenance procedure for flow controller settings for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) systems which resulted in severe system flow oscillations during vessel injection following a reactor scram.

This finding is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone whose objective is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The performance deficiency associated with this event is an inadequate maintenance procedure that resulted in HPCI and RCIC flow oscillations during reactor vessel injection. Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRCs regulatory function, and was not the result of any willful violation of NRC requirements or Exelon procedures. The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation.

This issue has a cross-cutting aspect in the Human Performance area for resources. Specifically, the HPCI/RCIC flow controller tuning procedure did not specify the acceptable values to prevent flow oscillations.

Inspection Report# : 2007003 *(pdf)*

Significance: G Dec 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform timely corrective actions for a revision to an Offsite Electrical Power Voltage Calculation
The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion XVI, “Corrective Actions,” because a condition adverse to quality related to a non-conservative offsite electrical voltage calculation was identified by Exelon in March 2005, but was not promptly corrected. The untimely corrective actions contributed to a missed Technical Specification limiting condition for operation for the required offsite electrical power supplies for Units 1 and 2 in July 2006. Exelon completed a revision to the electrical grid voltage calculation, in September 2006, and adjusted the safeguards transformer tap changer settings to prevent a potential loss of offsite electrical power for a postulated single Unit trip in conjunction with a loss of coolant accident event. Exelon has entered this issue into their corrective action program for resolution.

The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation, conducted after determining that a Phase 2 analysis was not appropriate for this issue. Phase 1 of the SDP screened the issue as needing further evaluation because the finding results in the offsite power safety function being inoperable for longer than its TS limiting condition of operation. The Phase 3 analysis used the Limerick SPAR model, assuming that, for a two day period, any LOCA initiating event would also cause a loss of offsite power. The SPAR model identified a core damage increase that was several orders of magnitude below the 1 in 10,000,000 year range (E-7). This very small increase was driven by the low frequency of LOCA initiating events and the short

exposure time. The dominate core damage sequence, given a LOCA without offsite power, was a failure of all EDGs due to a common cause.

This issue has a cross-cutting aspect in the Problem Identification and Resolution area for corrective action program. Specifically, the voltage regulation study calculation was not revised in a timely manner.
Inspection Report# : 2006005 *(pdf)*

Barrier Integrity

Significance: G Mar 10, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Clearance Results in Opening of the Scram Discharge Vent Drain Valves
The inspectors identified a green, self-revealing, non-cited violation of Technical Specification 6.8, "Procedures and Programs," due to an inadequate safety tagging clearance which resulted in inadvertently opening the scram discharge volume vent and drain valves in hot shutdown with a full scram signal inserted, valves that were part of the reactor coolant system pressure boundary. Station personnel discovered the condition and closed the SDV vent and drain valves, stopping the source of water. Exelon entered this issue into their corrective action program for resolution.

The finding is more than minor because it affects the reactor coolant system (RCS) equipment and barrier performance attribute of the Barrier Integrity cornerstone whose objective is to provide reasonable assurance that physical design barriers protect the public from radionuclide releases. This finding is of very low safety significance because it did not result in exceeding the Technical Specification limit for identified reactor coolant system leakage and would not have likely affected other mitigation systems resulting in a total loss of their safety function. The reactor was already shutdown and depressurized to 25 psig, with decay heat removal to the condenser, prior to the event and thus did not increase the chance of a loss of coolant accident (LOCA). This issue has a human performance cross-cutting aspect in the area of work control because station personnel did not appropriately coordinate the safety tagging work activity.
Inspection Report# : 2007002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : December 07, 2007

Limerick 2
4Q/2007 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Apr 24, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate HPCI/RCIC Flow Controller Tuning Procedure
The inspectors identified a Green, self-revealing, non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion V, "Instructions Procedures and Drawings," due to an inadequate maintenance procedure for flow controller settings for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) systems which resulted in severe system flow oscillations during vessel injection following a reactor scram.

This finding is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone whose objective is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The performance deficiency associated with this event is an inadequate maintenance procedure that resulted in HPCI and RCIC flow oscillations during reactor vessel injection. Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRCs regulatory function, and was not the result of any willful violation of NRC requirements or Exelon procedures. The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation.

This issue has a cross-cutting aspect in the Human Performance area for resources. Specifically, the HPCI/RCIC flow controller tuning procedure did not specify the acceptable values to prevent flow oscillations.

Inspection Report# : 2007003 *(pdf)*

Barrier Integrity

Significance: G Mar 10, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Clearance Results in Opening of the Scram Discharge Vent Drain Valves
The inspectors identified a green, self-revealing, non-cited violation of Technical Specification 6.8, “Procedures and Programs,” due to an inadequate safety tagging clearance which resulted in inadvertently opening the scram discharge volume vent and drain valves in hot shutdown with a full scram signal inserted, valves that were part of the reactor coolant system pressure boundary. Station personnel discovered the condition and closed the SDV vent and drain valves, stopping the source of water. Exelon entered this issue into their corrective action program for resolution.

The finding is more than minor because it affects the reactor coolant system (RCS) equipment and barrier performance attribute of the Barrier Integrity cornerstone whose objective is to provide reasonable assurance that physical design barriers protect the public from radionuclide releases. This finding is of very low safety significance because it did not result in exceeding the Technical Specification limit for identified reactor coolant system leakage and would not have likely affected other mitigation systems resulting in a total loss of their safety function. The

reactor was already shutdown and depressurized to 25 psig, with decay heat removal to the condenser, prior to the event and thus did not increase the chance of a loss of coolant accident (LOCA). This issue has a human performance cross-cutting aspect in the area of work control because station personnel did not appropriately coordinate the safety tagging work activity.
Inspection Report# : 2007002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : February 04, 2008

Limerick 2
1Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Feb 01, 2008
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Maintenance Procedure for the 2A Main Transformer
A self-revealing finding was identified for an inadequate maintenance procedure regarding electrical connections associated with the Unit 2A Main Transformer bushings. The procedure was not clear as to the appropriate method to prepare the surface for an aluminum bushing terminal and did not provide adequate information on torque requirements and the use of anti-oxidant grease. This resulted in the failure of the bushing connection and a Unit 2 reactor scram on February 1, 2008. Exelon entered this issue into the corrective action program (CAP), performed repairs, and revised the procedure to reflect the appropriate information to successfully assemble the connection.

The issue is more that minor because it is associated with procedure quality attribute of the Initiating Events cornerstone and affected the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors evaluated the finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." This finding was determined to be of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would be unavailable. (Section 1R12)

Inspection Report# : 2008002 *(pdf)*

Mitigating Systems

Significance: G Nov 09, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Required Voltage for Load Tap Changer Motor
The team identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, Design Control. Specifically, the licensee did not ensure the automatic load tap changer (LTC) controls and motor for the 101 and 201 safeguards, 10 station auxiliary, and 20 regulating transformers had adequate voltage to operate during design basis events. As a result of a new voltage study, Exelon performed modifications to change the load tap changers response time in 2006 and credited the LTCs for offsite power source operability. The team questioned whether there was sufficient voltage supplied to the LTC motor to prevent it from stalling during the worst case degraded voltage conditions of the transient. In response, the licensee performed a number of calculations, revised existing calculations and received additional information from the LTC vendor to demonstrate that sufficient voltage was available during the worst case degraded voltage levels. The team reviewed and agreed with the conclusion.
The finding was more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the team conducted a Phase 1 screening and determined the finding was of very low safety significance (Green) because it was a design deficiency that did not result in a loss-of-offsite power operability. This

issue has a cross-cutting aspect in the area of Human Performance - Resources which requires licensees to ensure that equipment is adequate to assure nuclear safety, specifically: complete, accurate and up to date design documentation.
Inspection Report# : 2007007 *(pdf)*

Significance: G Aug 09, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Fire safe Shutdown Procedure for Securing HPCI
The team identified a finding of very low safety significance (Green) involving a non-cited violation of the Limerick Generating Station operating license, in that the procedure for shutting down the plant in response to a fire in the cable spreading room was not consistent with the safe shutdown analysis. Specifically, impediments related to the safe shutdown procedure would have prevented the operators from securing the high pressure coolant injection (HPCI) system within the design time limit. Fire induced cable failures in the cable spreading room could allow HPCI to overfill the reactor vessel which would adversely affect the operation of the reactor core isolation cooling (RCIC) system and the main steam relief valves (MSRVs).
This issue was more than minor because it affected the procedure quality attribute associated with the mitigating systems cornerstone as related to the objective of ensuring the reliability and availability of the RCIC system and MSRVs under postulated fire scenarios. The finding was of very low safety significance based on a Phase 2 Significance Determination Process (SDP) evaluation performed in accordance with IMC 0609, Appendix F, “Fire Protection Significance Determination Process.”
Inspection Report# : 2007006 *(pdf)*

Significance: G Apr 24, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate HPCI/RCIC Flow Controller Tuning Procedure
The inspectors identified a Green, self-revealing, non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion V, "Instructions Procedures and Drawings," due to an inadequate maintenance procedure for flow controller settings for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) systems which resulted in severe system flow oscillations during vessel injection following a reactor scram.

This finding is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone whose objective is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The performance deficiency associated with this event is an inadequate maintenance procedure that resulted in HPCI and RCIC flow oscillations during reactor vessel injection. Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRCs regulatory function, and was not the result of any willful violation of NRC requirements or Exelon procedures. The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation.

This issue has a cross-cutting aspect in the Human Performance area for resources. Specifically, the HPCI/RCIC flow controller tuning procedure did not specify the acceptable values to prevent flow oscillations.

Inspection Report# : 2007003 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : June 05, 2008

Limerick 2
2Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Feb 01, 2008
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Maintenance Procedure for the 2A Main Transformer
A self-revealing finding was identified for an inadequate maintenance procedure regarding electrical connections associated with the Unit 2A Main Transformer bushings. The procedure was not clear as to the appropriate method to prepare the surface for an aluminum bushing terminal and did not provide adequate information on torque requirements and the use of anti-oxidant grease. This resulted in the failure of the bushing connection and a Unit 2 reactor scram on February 1, 2008. Exelon entered this issue into the corrective action program (CAP), performed repairs, and revised the procedure to reflect the appropriate information to successfully assemble the connection.

The issue is more that minor because it is associated with procedure quality attribute of the Initiating Events cornerstone and affected the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors evaluated the finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." This finding was determined to be of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would be unavailable. (Section 1R12)

Inspection Report# : 2008002 *(pdf)*

Mitigating Systems

Significance: G Nov 09, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Required Voltage for Load Tap Changer Motor
The team identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, Design Control. Specifically, the licensee did not ensure the automatic load tap changer (LTC) controls and motor for the 101 and 201 safeguards, 10 station auxiliary, and 20 regulating transformers had adequate voltage to operate during design basis events. As a result of a new voltage study, Exelon performed modifications to change the load tap changers response time in 2006 and credited the LTCs for offsite power source operability. The team questioned whether there was sufficient voltage supplied to the LTC motor to prevent it from stalling during the worst case degraded voltage conditions of the transient. In response, the licensee performed a number of calculations, revised existing calculations and received additional information from the LTC vendor to demonstrate that sufficient voltage was available during the worst case degraded voltage levels. The team reviewed and agreed with the conclusion.
The finding was more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the team conducted a Phase 1 screening and determined the finding was of very low safety significance (Green) because it was a design deficiency that did not result in a loss-of-offsite power operability. This

issue has a cross-cutting aspect in the area of Human Performance - Resources which requires licensees to ensure that equipment is adequate to assure nuclear safety, specifically: complete, accurate and up to date design documentation.
Inspection Report# : 2007007 *(pdf)*

Significance: G Aug 09, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Fire safe Shutdown Procedure for Securing HPCI
The team identified a finding of very low safety significance (Green) involving a non-cited violation of the Limerick Generating Station operating license, in that the procedure for shutting down the plant in response to a fire in the cable spreading room was not consistent with the safe shutdown analysis. Specifically, impediments related to the safe shutdown procedure would have prevented the operators from securing the high pressure coolant injection (HPCI) system within the design time limit. Fire induced cable failures in the cable spreading room could allow HPCI to overfill the reactor vessel which would adversely affect the operation of the reactor core isolation cooling (RCIC) system and the main steam relief valves (MSRVs).
This issue was more than minor because it affected the procedure quality attribute associated with the mitigating systems cornerstone as related to the objective of ensuring the reliability and availability of the RCIC system and MSRVs under postulated fire scenarios. The finding was of very low safety significance based on a Phase 2 Significance Determination Process (SDP) evaluation performed in accordance with IMC 0609, Appendix F, “Fire Protection Significance Determination Process.”
Inspection Report# : 2007006 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct Adverse Condition Associated with Motor Operated Valves
The inspectors identified an NCV of Title 10 of the Code of Federal Regulation, Part 20 (10CFR50), Appendix B, Criterion XVI, Corrective Action, for not correcting a condition adverse to quality associated with safety-related motor operated valve motor control center auxiliary contact switches in a timely manner following the failure of the Unit 1 Core Spray Loop A test bypass primary containment isolation valve (HV-052-1F015A) to close on August 3, 2006. As a result, the Unit 2 RCIC turbine exhaust line vacuum breaker outboard primary containment isolation valve (HV-049-2F080) experienced a similar failure to close on June 4, 2008.

The finding was more than minor because it was associated with the structures, systems, and components and barrier containment performance attribute of the Barrier Integrity cornerstone and affected the objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents and events. The inspector assessed the finding using Phase 1 of IMC 0609, Appendix A, “Significance Determination Process for Reactor Inspection Findings for At-Power Situations” and determined the finding to be of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment. This finding has a cross-cutting aspect of Problem Identification and Resolution because Exelon did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with the safety significance and complexity (P.1(d)). (Section 4OA2)

Inspection Report# : 2008003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : August 29, 2008

Limerick 2
3Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Feb 01, 2008
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Maintenance Procedure for the 2A Main Transformer
A self-revealing finding was identified for an inadequate maintenance procedure regarding electrical connections associated with the Unit 2A Main Transformer bushings. The procedure was not clear as to the appropriate method to prepare the surface for an aluminum bushing terminal and did not provide adequate information on torque requirements and the use of anti-oxidant grease. This resulted in the failure of the bushing connection and a Unit 2 reactor scram on February 1, 2008. Exelon entered this issue into the corrective action program (CAP), performed repairs, and revised the procedure to reflect the appropriate information to successfully assemble the connection.

The issue is more that minor because it is associated with procedure quality attribute of the Initiating Events cornerstone and affected the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors evaluated the finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." This finding was determined to be of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would be unavailable. (Section 1R12)

Inspection Report# : 2008002 *(pdf)*

Mitigating Systems

Significance: G Nov 09, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Required Voltage for Load Tap Changer Motor
The team identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, Design Control. Specifically, the licensee did not ensure the automatic load tap changer (LTC) controls and motor for the 101 and 201 safeguards, 10 station auxiliary, and 20 regulating transformers had adequate voltage to operate during design basis events. As a result of a new voltage study, Exelon performed modifications to change the load tap changers response time in 2006 and credited the LTCs for offsite power source operability. The team questioned whether there was sufficient voltage supplied to the LTC motor to prevent it from stalling during the worst case degraded voltage conditions of the transient. In response, the licensee performed a number of calculations, revised existing calculations and received additional information from the LTC vendor to demonstrate that sufficient voltage was available during the worst case degraded voltage levels. The team reviewed and agreed with the conclusion.
The finding was more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the team conducted a Phase 1 screening and determined the finding was of very low safety significance (Green) because it was a design deficiency that did not result in a loss-of-offsite power operability. This issue has a cross-cutting aspect in the area of Human Performance - Resources which requires licensees to ensure that equipment is adequate to assure nuclear safety, specifically: complete, accurate and up to date design documentation.
Inspection Report# : 2007007 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct Adverse Condition Associated with Motor Operated Valves
The inspectors identified an NCV of Title 10 of the Code of Federal Regulation, Part 20 (10CFR50), Appendix B, Criterion XVI, Corrective Action, for not correcting a condition adverse to quality associated with safety-related motor operated valve motor control center auxiliary contact switches in a timely manner following the failure of the Unit 1 Core Spray Loop A test bypass primary containment isolation valve (HV-052-1F015A) to close on August 3, 2006. As a result, the Unit 2 RCIC turbine exhaust line vacuum breaker outboard primary containment isolation valve (HV-049-2F080) experienced a similar failure to close on June 4, 2008.

The finding was more than minor because it was associated with the structures, systems, and components and barrier containment performance attribute of the Barrier Integrity cornerstone and affected the objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents and events. The inspector assessed the finding using Phase 1 of IMC 0609, Appendix A, “Significance Determination Process for Reactor Inspection Findings for At-Power Situations” and determined the finding to be of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment. This finding has a cross-cutting aspect of Problem Identification and Resolution because Exelon did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with the safety significance and complexity (P.1(d)). (Section 4OA2)

Inspection Report# : 2008003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : November 26, 2008

Limerick 2
4Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Feb 01, 2008
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Maintenance Procedure for the 2A Main Transformer
A self-revealing finding was identified for an inadequate maintenance procedure regarding electrical connections associated with the Unit 2A Main Transformer bushings. The procedure was not clear as to the appropriate method to prepare the surface for an aluminum bushing terminal and did not provide adequate information on torque requirements and the use of anti-oxidant grease. This resulted in the failure of the bushing connection and a Unit 2 reactor scram on February 1, 2008. Exelon entered this issue into the corrective action program (CAP), performed repairs, and revised the procedure to reflect the appropriate information to successfully assemble the connection.

The issue is more that minor because it is associated with procedure quality attribute of the Initiating Events cornerstone and affected the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors evaluated the finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." This finding was determined to be of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would be unavailable. (Section 1R12)

Inspection Report# : 2008002 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Post Maintenance Test following Containment Isolation System Relay Replacement
The inspectors identified a NCV of Technical Specification 6.8.1, "Administrative Controls-Procedures", because Exelon did not maintain adequate maintenance procedures associated with work performed on the Unit 2 Nuclear Steam Supply Shutoff System (NSSSS). Specifically, the procedures, which performed system relay replacements, did not contain adequate post maintenance testing to demonstrate that the Technical Specification required response times of all circuits affected by the maintenance were satisfied.

The inspectors determined that this finding was more than minor because it was associated with the procedure quality attribute of the Mitigating System cornerstone, and affected the Mitigating System cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. As a result, additional unavailability and engineering evaluation was required to demonstrate satisfactory response times. The finding was determined to be of very low safety significance (Green) because it did not represent a loss of safety function. The inspectors determined this finding has a cross-cutting aspect in Human Performance, Resources, because Exelon did not provide complete and accurate work packages to assure nuclear safety. Specifically, the NSSSS was returned to service without all the required post maintenance testing being performed to demonstrate operability. (IMC 0305 aspect: H.2(c) (Section 1R19).
Inspection Report# : 2008005 *(pdf)*

Significance: G Sep 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Secondary Containment Control Procedure
The inspectors identified a NCV of Technical Specification (TS) 6.8.1, "Administrative Controls – Procedures," because Exelon did not maintain adequate procedures in that Emergency Operating Procedure T-103, "Secondary Containment Control," contained an inappropriate high maximum safe operating flooding level for the Unit 2 High Pressure Coolant Injection (HPCI) room.

The inspectors determined that this finding was greater than minor because it affected the procedure quality attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective of ensuring availability, reliability, and capability of the HPCI system. Emergency Operating Procedure T-103, "Secondary Containment Control," delineated an incorrect value of 40 inches for the Unit 2 HPCI room maximum safe operating (MSO) flooding level. Water at this height in the Unit 2 HPCI room would submerge the auxiliary oil pump and would render the HPCI system inoperable. This finding is of very low safety significance because it did not represent a design or qualification deficiency, a loss of safety system function, an actual loss of safety function of a single train for greater than its TS allowed outage time, or a total loss of any safety function that contributes to external event-initiated core damage sequences. The inspectors determined that this violation has a cross-cutting aspect in the area of problem identification and resolution because Limerick did not perform a thorough extent-of-condition review following a 2005 NCV for a similar issue for the Unit 1 RCIC room MSO level (NCV 05000352/2005003-01). Although the station identified that the Unit 2 HPCI auxiliary oil pump and its associated junction box were located below the MSO level during the review, Limerick did not thoroughly evaluate the impact of the elevation difference on the operation of the HPCI system.

Inspection Report# : 2008004 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct Adverse Condition Associated with Motor Operated Valves
The inspectors identified an NCV of Title 10 of the Code of Federal Regulation, Part 20 (10CFR50), Appendix B, Criterion XVI, Corrective Action, for not correcting a condition adverse to quality associated with safety-related motor operated valve motor control center auxiliary contact switches in a timely manner following the failure of the Unit 1 Core Spray Loop A test bypass primary containment isolation valve (HV-052-1F015A) to close on August 3, 2006. As a result, the Unit 2 RCIC turbine exhaust line vacuum breaker outboard primary containment isolation valve (HV-049-2F080) experienced a similar failure to close on June 4, 2008.

The finding was more than minor because it was associated with the structures, systems, and components and barrier containment performance attribute of the Barrier Integrity cornerstone and affected the objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents and events. The inspector assessed the finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination Process for Reactor Inspection Findings for At-Power Situations" and determined the finding to be of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment. This finding has a cross-cutting aspect of Problem Identification and Resolution because Exelon did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with the safety significance and complexity (P.1(d)). (Section 4OA2)

Inspection Report# : 2008003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Sep 12, 2008
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The inspectors concluded that Exelon was generally effective in identifying, evaluating, and resolving problems. Specifically, Exelon personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with the safety significance. For most cases, Exelon appropriately screened issues for operability and reportability and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. However, for one issue reviewed by the inspectors, an inadequate evaluation resulted in an NRC-identified finding. Corrective actions taken to address the problems identified in Exelon's corrective action process were typically implemented in a timely manner.

The inspectors also concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to Limerick Generating Station (LGS) operations. In addition, based on those items selected for review by the inspectors, Exelon's audits and self-assessments were thorough and probing.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employees concerns program issues, the inspectors did not identify any concerns that site personnel were not willing to raise safety issues nor did they identify conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2008009 *(pdf)*

Significance: G Aug 19, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to translate preventative maintenance practices described in design calculations used to upgrade the LGS 125 ton Reactor Building Bridge Crane into the approved crane inspection procedures.
A Green non-cited violation (NCV) of 10CFR Part 50, Appendix B, Criterion III, "Design Control" was identified. The NCV was related to the licensee's failure to translate preventative maintenance practices described in design calculations used to upgrade the LGS 125 ton Reactor Building Bridge Crane into the approved crane inspection

procedures.
The finding is more than minor because left uncorrected it could become a more significant safety concern if the crane components were allowed to degrade in an undetected manner. Specifically, the failure to develop the preventative maintenance practices would lead to operation of the crane in a degraded condition.
The inspectors used Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," because other significance determination process guidance was not suited to provide reasonable estimates of the significance of this inspection finding. With the assistance of Region I management, the inspectors determined that the finding was of very low safety significance (Green) because there was no actual crane operation problems during any spent fuel handling activities.

Inspection Report# : 2008006 *(pdf)*

Last modified : April 07, 2009

Limerick 2
1Q/2009 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Obtain License Amendment for TS Bases Change
The inspectors identified a Severity Level IV NCV of 10 CFR 50.59, "Changes, Test, and Experiment," for failing to obtain a Technical Specification (TS) license amendment for a change made to the TS Bases concerning offsite power source operability. Changes made to TS Bases 3/4.8.1 required a change in the TS, because the change caused the bases to be in direct conflict with the requirements of TS Limiting Condition for Operation 3.8.1, "AC Sources Operating," through the application of associated TS surveillance requirements. Exelon entered this issue into the CAP and issued night orders to operators which required declaring an offsite power supply inoperable when an offsite power supply feeder breaker became unavailable to an emergency bus.

Because this was a violation of 10 CFR 50.59, it was considered to be a violation which potentially impedes or impacts the regulatory process. Therefore, such violations are characterized using the traditional enforcement process. In this case, the licensee failed to perform an adequate safety evaluation in accordance with 10 CFR 50.59 because the approved change to the technical specification basis was in conflict with the TS surveillance requirements. This change required prior approval from the NRC before its implementation. Comparing this item to the examples in NUREG 1600, Supplement I, "Reactor Operations," this finding is more than minor because NRC approval would have been required. The inspectors completed a Significance Determination Review using NRC IMC 0609, Attachment 4, Phase 1 – Initial Screening and Characterization of Findings. Using the Phase I Screening worksheet the finding was determined to be of very low safety significance (Green) since the finding did not represent an actual loss of safety function for greater than the TS allowed outage time. Comparing this item to the examples in NUREG 1600, Supplement I, this finding is similar to Item D.5, "Violations of 10 CFR 50.59 that result in conditions evaluated as having very low safety significance (i.e., Green) by the SDP." This is an example of a Severity Level IV violation. Since the TS Bases change was made in 2000, the inspectors determined that this finding was not reflective of current licensee performance and, therefore, did not have a cross-cutting aspect.

Inspection Report# : 2009002 *(pdf)*

Significance: G Dec 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Post Maintenance Test following Containment Isolation System Relay Replacement
The inspectors identified a NCV of Technical Specification 6.8.1, "Administrative Controls-Procedures", because Exelon did not maintain adequate maintenance procedures associated with work performed on the Unit 2 Nuclear Steam Supply Shutoff System (NSSSS). Specifically, the procedures, which performed system relay replacements, did not contain adequate post maintenance testing to demonstrate that the Technical Specification required response times of all circuits affected by the maintenance were satisfied.

The inspectors determined that this finding was more than minor because it was associated with the procedure quality attribute of the Mitigating System cornerstone, and affected the Mitigating System cornerstone objective to ensure the

availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. As a result, additional unavailability and engineering evaluation was required to demonstrate satisfactory response times. The finding was determined to be of very low safety significance (Green) because it did not represent a loss of safety function. The inspectors determined this finding has a cross-cutting aspect in Human Performance, Resources, because Exelon did not provide complete and accurate work packages to assure nuclear safety. Specifically, the NSSSS was returned to service without all the required post maintenance testing being performed to demonstrate operability. (IMC 0305 aspect: H.2(c) (Section 1R19).
Inspection Report# : 2008005 *(pdf)*

Significance: G Sep 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Secondary Containment Control Procedure
The inspectors identified a NCV of Technical Specification (TS) 6.8.1, "Administrative Controls – Procedures," because Exelon did not maintain adequate procedures in that Emergency Operating Procedure T-103, "Secondary Containment Control," contained an inappropriate high maximum safe operating flooding level for the Unit 2 High Pressure Coolant Injection (HPCI) room.

The inspectors determined that this finding was greater than minor because it affected the procedure quality attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective of ensuring availability, reliability, and capability of the HPCI system. Emergency Operating Procedure T-103, "Secondary Containment Control," delineated an incorrect value of 40 inches for the Unit 2 HPCI room maximum safe operating (MSO) flooding level. Water at this height in the Unit 2 HPCI room would submerge the auxiliary oil pump and would render the HPCI system inoperable. This finding is of very low safety significance because it did not represent a design or qualification deficiency, a loss of safety system function, an actual loss of safety function of a single train for greater than its TS allowed outage time, or a total loss of any safety function that contributes to external event-initiated core damage sequences. The inspectors determined that this violation has a cross-cutting aspect in the area of problem identification and resolution because Limerick did not perform a thorough extent-of-condition review following a 2005 NCV for a similar issue for the Unit 1 RCIC room MSO level (NCV 05000352/2005003-01). Although the station identified that the Unit 2 HPCI auxiliary oil pump and its associated junction box were located below the MSO level during the review, Limerick did not thoroughly evaluate the impact of the elevation difference on the operation of the HPCI system.

Inspection Report# : 2008004 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Design Control for Reactor Building Temperatures
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the failure to translate minimum room temperatures assumed in an isolation actuation instrumentation setpoint calculation into Unit 1 and 2 procedures such that reactor building room temperatures were maintained above the minimum assumed. As a result, the reactor enclosure and refueling area ventilation systems were not operated to assure that room temperatures were maintained above the minimum assumed in design basis calculations. Exelon entered the issue into the Corrective Action Program (CAP) for resolution.

This finding was more than minor because it was associated with the Design Control attribute of the Barrier Integrity cornerstone, and affected the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers, including containment, protect the public from radionuclide releases caused by accidents or event. This finding was determined to be of very low safety significance because it did not represent an actual open pathway

in the physical integrity of reactor containment, containment isolation system, and heat removal components. This finding has a cross-cutting aspect in Human Performance, Decision Making, because the licensee did not make a safety significant decision using a systematic process to ensure safety was maintained [H.1(a)]. Specifically, the decision to operate the reactor buildings at lower temperatures was made using an informal process within operations, therefore interdisciplinary input and a review by engineering and other support organizations was not obtained

Inspection Report# : 2009002 *(pdf)*

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct Adverse Condition Associated with Motor Operated Valves
The inspectors identified an NCV of Title 10 of the Code of Federal Regulation, Part 20 (10CFR50), Appendix B, Criterion XVI, Corrective Action, for not correcting a condition adverse to quality associated with safety-related motor operated valve motor control center auxiliary contact switches in a timely manner following the failure of the Unit 1 Core Spray Loop A test bypass primary containment isolation valve (HV-052-1F015A) to close on August 3, 2006. As a result, the Unit 2 RCIC turbine exhaust line vacuum breaker outboard primary containment isolation valve (HV-049-2F080) experienced a similar failure to close on June 4, 2008.

The finding was more than minor because it was associated with the structures, systems, and components and barrier containment performance attribute of the Barrier Integrity cornerstone and affected the objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents and events. The inspector assessed the finding using Phase 1 of IMC 0609, Appendix A, “Significance Determination Process for Reactor Inspection Findings for At-Power Situations” and determined the finding to be of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment. This finding has a cross-cutting aspect of Problem Identification and Resolution because Exelon did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with the safety significance and complexity (P.1(d)). (Section 4OA2)

Inspection Report# : 2008003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Sep 12, 2008
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The inspectors concluded that Exelon was generally effective in identifying, evaluating, and resolving problems. Specifically, Exelon personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with the safety significance. For most cases, Exelon appropriately screened issues for operability and reportability and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. However, for one issue reviewed by the inspectors, an inadequate evaluation resulted in an NRC-identified finding. Corrective actions taken to address the problems identified in Exelon's corrective action process were typically implemented in a timely manner.

The inspectors also concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to Limerick Generating Station (LGS) operations. In addition, based on those items selected for review by the inspectors, Exelon's audits and self-assessments were thorough and probing.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employees concerns program issues, the inspectors did not identify any concerns that site personnel were not willing to raise safety issues nor did they identify conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2008009 *(pdf)*

Significance: G Aug 19, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to translate preventative maintenance practices described in design calculations used to upgrade the LGS 125 ton Reactor Building Bridge Crane into the approved crane inspection procedures.
A Green non-cited violation (NCV) of 10CFR Part 50, Appendix B, Criterion III, "Design Control" was identified. The NCV was related to the licensee's failure to translate preventative maintenance practices described in design calculations used to upgrade the LGS 125 ton Reactor Building Bridge Crane into the approved crane inspection procedures.
The finding is more than minor because left uncorrected it could become a more significant safety concern if the crane components were allowed to degrade in an undetected manner. Specifically, the failure to develop the preventative maintenance practices would lead to operation of the crane in a degraded condition.
The inspectors used Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," because other significance determination process guidance was not suited to provide reasonable estimates of the significance of this inspection finding. With the assistance of Region I management, the inspectors determined that the finding was of very low safety significance (Green) because there was no actual crane operation problems during any spent fuel handling activities.

Inspection Report# : 2008006 *(pdf)*

Last modified : May 28, 2009

Limerick 2
2Q/2009 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 17, 2009
Identified By: NRC
Item Type: FIN Finding
Failure to Adequately Assess Erratic Time Delay Relay Operation on Unit 2 HPCI Operability
The inspectors identified a Green finding associated with the failure to adequately assess erratic time delay relay operation on Unit 2 High Pressure Coolant Injection (HPCI) system operability in a timely manner commensurate with the potential safety significance. Following a failed surveillance test, the Unit 2 HPCI system was considered operable despite having no “as-left” data for a system time delay relay, because of erratic operation, and failing to adequately address the relay’s design basis function. This finding is more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using Phase 1 of IMC 0609, Appendix A, “Significance Determination Process for Reactor Inspection Findings for At-Power Situations” and determined the finding to be of very low safety significance (Green) because it did not represent a loss of safety function of a single train. This finding has a crosscutting aspect in Human Performance, Decision-Making, because Exelon did not make a safety-significant decision using a systematic process, especially when faced with uncertain or unexpected plant conditions, to ensure safety is maintained [H.1(a)]. This included not obtaining timely interdisciplinary input and review on the safety significant decision (H.1(a)).

Inspection Report# : 2009003 *(pdf)*

Significance: G Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Obtain License Amendment for TS Bases Change
The inspectors identified a Severity Level IV NCV of 10 CFR 50.59, “Changes, Test, and Experiment,” for failing to obtain a Technical Specification (TS) license amendment for a change made to the TS Bases concerning offsite power source operability. Changes made to TS Bases 3/4.8.1 required a change in the TS, because the change caused the bases to be in direct conflict with the requirements of TS Limiting Condition for Operation 3.8.1, “AC Sources Operating,” through the application of associated TS surveillance requirements. Exelon entered this issue into the CAP and issued night orders to operators which required declaring an offsite power supply inoperable when an offsite power supply feeder breaker became unavailable to an emergency bus.

Because this was a violation of 10 CFR 50.59, it was considered to be a violation which potentially impedes or impacts the regulatory process. Therefore, such violations are characterized using the traditional enforcement process. In this case, the licensee failed to perform an adequate safety evaluation in accordance with 10 CFR 50.59 because the approved change to the technical specification basis was in conflict with the TS surveillance requirements. This change required prior approval from the NRC before its implementation. Comparing this item to the examples in NUREG 1600, Supplement I, ”Reactor Operations,” this finding is more than minor because NRC approval would have been required. The inspectors completed a Significance Determination Review using NRC IMC 0609, Attachment 4, Phase 1 – Initial Screening and Characterization of Findings. Using the Phase I Screening worksheet

the finding was determined to be of very low safety significance (Green) since the finding did not represent an actual loss of safety function for greater than the TS allowed outage time. Comparing this item to the examples in NUREG 1600, Supplement I, this finding is similar to Item D.5, “Violations of 10 CFR 50.59 that result in conditions evaluated as having very low safety significance (i.e., Green) by the SDP.” This is an example of a Severity Level IV violation. Since the TS Bases change was made in 2000, the inspectors determined that this finding was not reflective of current licensee performance and, therefore, did not have a cross-cutting aspect.

Inspection Report# : 2009002 *(pdf)*

Significance: G Dec 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Post Maintenance Test following Containment Isolation System Relay Replacement
The inspectors identified a NCV of Technical Specification 6.8.1, “Administrative Controls-Procedures”, because Exelon did not maintain adequate maintenance procedures associated with work performed on the Unit 2 Nuclear Steam Supply Shutoff System (NSSSS). Specifically, the procedures, which performed system relay replacements, did not contain adequate post maintenance testing to demonstrate that the Technical Specification required response times of all circuits affected by the maintenance were satisfied.

The inspectors determined that this finding was more than minor because it was associated with the procedure quality attribute of the Mitigating System cornerstone, and affected the Mitigating System cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. As a result, additional unavailability and engineering evaluation was required to demonstrate satisfactory response times. The finding was determined to be of very low safety significance (Green) because it did not represent a loss of safety function. The inspectors determined this finding has a cross-cutting aspect in Human Performance, Resources, because Exelon did not provide complete and accurate work packages to assure nuclear safety. Specifically, the NSSSS was returned to service without all the required post maintenance testing being performed to demonstrate operability. (IMC 0305 aspect: H.2(c) (Section 1R19).
Inspection Report# : 2008005 *(pdf)*

Significance: G Sep 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Secondary Containment Control Procedure
The inspectors identified a NCV of Technical Specification (TS) 6.8.1, “Administrative Controls – Procedures,” because Exelon did not maintain adequate procedures in that Emergency Operating Procedure T-103, “Secondary Containment Control,” contained an inappropriate high maximum safe operating flooding level for the Unit 2 High Pressure Coolant Injection (HPCI) room.

The inspectors determined that this finding was greater than minor because it affected the procedure quality attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective of ensuring availability, reliability, and capability of the HPCI system. Emergency Operating Procedure T-103, “Secondary Containment Control,” delineated an incorrect value of 40 inches for the Unit 2 HPCI room maximum safe operating (MSO) flooding level. Water at this height in the Unit 2 HPCI room would submerge the auxiliary oil pump and would render the HPCI system inoperable. This finding is of very low safety significance because it did not represent a design or qualification deficiency, a loss of safety system function, an actual loss of safety function of a single train for greater than its TS allowed outage time, or a total loss of any safety function that contributes to external event-initiated core damage sequences. The inspectors determined that this violation has a cross-cutting aspect in the area of problem identification and resolution because Limerick did not perform a thorough extent-of-condition review following a 2005 NCV for a similar issue for the Unit 1 RCIC room MSO level (NCV 05000352/2005003-01). Although the station identified that the Unit 2 HPCI auxiliary oil pump and its associated junction box were located below the MSO level during the review, Limerick did not thoroughly evaluate the impact of the elevation difference on the operation of the HPCI system.

Inspection Report# : 2008004 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Design Control for Reactor Building Temperatures
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the failure to translate minimum room temperatures assumed in an isolation actuation instrumentation setpoint calculation into Unit 1 and 2 procedures such that reactor building room temperatures were maintained above the minimum assumed. As a result, the reactor enclosure and refueling area ventilation systems were not operated to assure that room temperatures were maintained above the minimum assumed in design basis calculations. Exelon entered the issue into the Corrective Action Program (CAP) for resolution.

This finding was more than minor because it was associated with the Design Control attribute of the Barrier Integrity cornerstone, and affected the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers, including containment, protect the public from radionuclide releases caused by accidents or event. This finding was determined to be of very low safety significance because it did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, and heat removal components. This finding has a cross-cutting aspect in Human Performance, Decision Making, because the licensee did not make a safety significant decision using a systematic process to ensure safety was maintained [H.1(a)]. Specifically, the decision to operate the reactor buildings at lower temperatures was made using an informal process within operations, therefore interdisciplinary input and a review by engineering and other support organizations was not obtained

Inspection Report# : 2009002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Sep 12, 2008
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The inspectors concluded that Exelon was generally effective in identifying, evaluating, and resolving problems. Specifically, Exelon personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with the safety significance. For most cases, Exelon appropriately screened issues for operability and reportability and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. However, for one issue reviewed by the inspectors, an inadequate evaluation resulted in an NRC-identified finding. Corrective actions taken to address the problems identified in Exelon's corrective action process were typically implemented in a timely manner.

The inspectors also concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to Limerick Generating Station (LGS) operations. In addition, based on those items selected for review by the inspectors, Exelon's audits and self-assessments were thorough and probing.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employees concerns program issues, the inspectors did not identify any concerns that site personnel were not willing to raise safety issues nor did they identify conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2008009 *(pdf)*

Significance:  Aug 19, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to translate preventative maintenance practices described in design calculations used to upgrade the LGS 125 ton Reactor Building Bridge Crane into the approved crane inspection procedures.
A Green non-cited violation (NCV) of 10CFR Part 50, Appendix B, Criterion III, "Design Control" was identified. The NCV was related to the licensee's failure to translate preventative maintenance practices described in design calculations used to upgrade the LGS 125 ton Reactor Building Bridge Crane into the approved crane inspection procedures.
The finding is more than minor because left uncorrected it could become a more significant safety concern if the crane components were allowed to degrade in an undetected manner. Specifically, the failure to develop the preventative maintenance practices would lead to operation of the crane in a degraded condition.
The inspectors used Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," because other significance determination process guidance was not suited to provide reasonable estimates of the significance of this inspection finding. With the assistance of Region I management, the inspectors determined that the finding was of very low safety significance (Green) because there was no actual crane operation problems during any spent fuel handling activities.

Inspection Report# : 2008006 *(pdf)*

Last modified : August 31, 2009

Limerick 2
3Q/2009 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Test 480 Volt Motor Control Unit Circuit Breakers
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to establish a test program for all safety-related 480 volt motor control unit (MCU) circuit breakers to assure that necessary testing was performed to demonstrate that they would perform the safety-related function in service. Specifically, in 2004, Exelon inappropriately classified certain safety related 480 volt molded-case circuit breakers as run-to-failure in the Performance Centered Maintenance (PCM) process, which resulted in the breakers receiving no planned preventive maintenance or testing. Exelon entered this issue into the Corrective Action Program (CAP) for resolution as Issue Report (IR) 948232. Exelon's corrective actions included: reclassifying all safety-related 480 volt MCUs as either "critical" or "non-critical," a formal review of the vendor's technical bulletin for applicability; and an extent of condition review of all direct current MCUs and 4 kilovolt circuit breakers. Also, preventive maintenance and testing was planned for all in-service 480 volt MCUs that had gone overdue because they were inappropriately classified as "run-to-failure."

This finding is more than minor because, if left uncorrected, the performance deficiency would lead to a more significant safety concern. Specifically, the installed molded case circuit breakers classified as run-to-failure had received no periodic planned maintenance or tests and were beyond the manufacturer's design life. Based on operating experience, this would result in a breaker being slow to trip or sticking in the "on" position after an over-current condition. The inspectors assessed the finding using Phase 1 of IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" and determined the finding to be of very low safety significance because the issue was a qualification deficiency confirmed not to result in loss of operability per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." Since the change to the PCM process was made in 2004, the inspectors determined that this finding was not reflective of current licensee performance and, therefore, did not have a cross cutting aspect.

Inspection Report# : 2009004 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct 480V Breaker Thermography
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failing to correct a condition adverse to quality associated with the performance of thermography on safety-related breakers. Specifically, although Exelon identified that the failure to perform thermography on breakers in a loaded condition was a causal factor for an electrical fault that occurred in January 2009, Exelon did not implement proper corrective actions to ensure that applicable future thermography examinations would be conducted while the equipment was in a loaded condition. Exelon entered this issue into the CAP as IR 874599, Assignment 58. Corrective actions included adding 48 breakers to the list of breakers that will be loaded prior to thermography and creating an assignment to formally assess the remaining breakers that may not receive routine thermography due to not being in a loaded condition.

The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using Phase 1 of IMC 0609, Attachment 4, “Phase 1 – Initial Screening and Characterization of Findings” and determined the finding to be of very low safety significance because it was not a design or qualification deficiency, did not represent a loss of system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take appropriate corrective actions to address a safety issue [P.1(d)]. Specifically, although the failure to perform thermography on breakers in loaded conditions was identified as a causal factor for an electrical fault, actions were not taken in a timely manner to ensure loaded conditions for applicable future thermography examinations

Inspection Report# : 2009004 *(pdf)*

Significance: G Jun 17, 2009
Identified By: NRC
Item Type: FIN Finding
Failure to Adequately Assess Erratic Time Delay Relay Operation on Unit 2 HPCI Operability
The inspectors identified a Green finding associated with the failure to adequately assess erratic time delay relay operation on Unit 2 High Pressure Coolant Injection (HPCI) system operability in a timely manner commensurate with the potential safety significance. Following a failed surveillance test, the Unit 2 HPCI system was considered operable despite having no “as-left” data for a system time delay relay, because of erratic operation, and failing to adequately address the relay’s design basis function. This finding is more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using Phase 1 of IMC 0609, Appendix A, “Significance Determination Process for Reactor Inspection Findings for At-Power Situations” and determined the finding to be of very low safety significance (Green) because it did not represent a loss of safety function of a single train. This finding has a crosscutting aspect in Human Performance, Decision-Making, because Exelon did not make a safety-significant decision using a systematic process, especially when faced with uncertain or unexpected plant conditions, to ensure safety is maintained [H.1(a)]. This included not obtaining timely interdisciplinary input and review on the safety significant decision (H.1(a)).

Inspection Report# : 2009003 *(pdf)*

Significance: G Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Obtain License Amendment for TS Bases Change
The inspectors identified a Severity Level IV NCV of 10 CFR 50.59, “Changes, Test, and Experiment,” for failing to obtain a Technical Specification (TS) license amendment for a change made to the TS Bases concerning offsite power source operability. Changes made to TS Bases 3/4.8.1 required a change in the TS, because the change caused the bases to be in direct conflict with the requirements of TS Limiting Condition for Operation 3.8.1, “AC Sources Operating,” through the application of associated TS surveillance requirements. Exelon entered this issue into the CAP and issued night orders to operators which required declaring an offsite power supply inoperable when an offsite power supply feeder breaker became unavailable to an emergency bus.

Because this was a violation of 10 CFR 50.59, it was considered to be a violation which potentially impedes or impacts the regulatory process. Therefore, such violations are characterized using the traditional enforcement process. In this case, the licensee failed to perform an adequate safety evaluation in accordance with 10 CFR 50.59 because the approved change to the technical specification basis was in conflict with the TS surveillance requirements. This change required prior approval from the NRC before its implementation. Comparing this item to the examples in NUREG 1600, Supplement I, ”Reactor Operations,” this finding is more than minor because NRC approval would have been required. The inspectors completed a Significance Determination Review using NRC IMC 0609,

Attachment 4, Phase 1 – Initial Screening and Characterization of Findings. Using the Phase I Screening worksheet the finding was determined to be of very low safety significance (Green) since the finding did not represent an actual loss of safety function for greater than the TS allowed outage time. Comparing this item to the examples in NUREG 1600, Supplement I, this finding is similar to Item D.5, "Violations of 10 CFR 50.59 that result in conditions evaluated as having very low safety significance (i.e., Green) by the SDP." This is an example of a Severity Level IV violation. Since the TS Bases change was made in 2000, the inspectors determined that this finding was not reflective of current licensee performance and, therefore, did not have a cross-cutting aspect.

Inspection Report# : 2009002 *(pdf)*

Significance:  Dec 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Post Maintenance Test following Containment Isolation System Relay Replacement
The inspectors identified a NCV of Technical Specification 6.8.1, "Administrative Controls-Procedures", because Exelon did not maintain adequate maintenance procedures associated with work performed on the Unit 2 Nuclear Steam Supply Shutoff System (NSSSS). Specifically, the procedures, which performed system relay replacements, did not contain adequate post maintenance testing to demonstrate that the Technical Specification required response times of all circuits affected by the maintenance were satisfied.

The inspectors determined that this finding was more than minor because it was associated with the procedure quality attribute of the Mitigating System cornerstone, and affected the Mitigating System cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. As a result, additional unavailability and engineering evaluation was required to demonstrate satisfactory response times. The finding was determined to be of very low safety significance (Green) because it did not represent a loss of safety function. The inspectors determined this finding has a cross-cutting aspect in Human Performance, Resources, because Exelon did not provide complete and accurate work packages to assure nuclear safety. Specifically, the NSSSS was returned to service without all the required post maintenance testing being performed to demonstrate operability. (IMC 0305 aspect: H.2(c) (Section 1R19).
Inspection Report# : 2008005 *(pdf)*

Barrier Integrity

Significance:  Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Design Control for Reactor Building Temperatures
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the failure to translate minimum room temperatures assumed in an isolation actuation instrumentation setpoint calculation into Unit 1 and 2 procedures such that reactor building room temperatures were maintained above the minimum assumed. As a result, the reactor enclosure and refueling area ventilation systems were not operated to assure that room temperatures were maintained above the minimum assumed in design basis calculations. Exelon entered the issue into the Corrective Action Program (CAP) for resolution.

This finding was more than minor because it was associated with the Design Control attribute of the Barrier Integrity cornerstone, and affected the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers, including containment, protect the public from radionuclide releases caused by accidents or event. This finding was determined to be of very low safety significance because it did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, and heat removal components. This finding has a cross-cutting aspect in Human Performance, Decision Making, because the licensee did not make a safety significant decision using a systematic process to ensure safety was maintained [H.1(a)]. Specifically, the decision to operate the reactor buildings at lower temperatures was made using an informal process within operations, therefore interdisciplinary input and a review by engineering and other support organizations was not obtained

Inspection Report# : 2009002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : December 10, 2009

Limerick 2
4Q/2009 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure Adequate Cooling Water Flow to Residual Heat Removal Room Unit Cooler
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for improperly positioning the Emergency Service Water (ESW) throttle valve to the Unit 1 'A' Residual Heat Removal (RHR) room unit cooler during an ESW flow balance surveillance test in April 2008. During the test, Exelon failed to adequately evaluate ESW flow data, and established ESW flow to the unit cooler at less than the minimum required. This rendered the 'A' RHR room unit cooler incapable of removing its design heat load for a period of approximately 13 months. Exelon entered this issue into their corrective action program for resolution.

This finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone, and it impacted the cornerstone objective of ensuring the availability and capability of systems that respond to initiating events to prevent undesirable consequences. Exelon's failure to accurately evaluate test data resulted in an inadequate ESW flow rate through the 'A' RHR room unit cooler, rendering it incapable of removing its design heat load. The finding is of very low safety significance because it did not represent a loss of safety function of a TS train or risk-significant non-TS train. The cause of the finding is related to the cross-cutting aspect of Human Performance, Work Practices Component because Exelon personnel did not utilize adequate human error prevention techniques, such as self and peer checking, to ensure work activities were performed properly. [H.4(a)]
Inspection Report# : 2009005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify Degraded Instrument Line in Emergency Service Water System
The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for Exelon's failure to identify a condition adverse to quality associated with the 'A' ESW pump discharge pressure instrument line. Specifically, Exelon had previous opportunity to identify and repair a degraded 'A' ESW instrument line following a leak on a similar instrument line in August 2008. However, the degraded condition of the 'A' instrument line was not detected until it resulted in a through-wall leak on November 7, 2009. In response to the leak, Exelon was required to isolate the 'A' ESW pump and enter the associated 45-day TS action statement. Exelon entered this issue into their corrective action program as Issue Report (IR) 990204 and IR 993012. Corrective actions included performing an investigation and scheduling extent of condition testing on the remaining 18 similar instrument lines.

The finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone, and it impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, upon discovery of the through wall leak, Exelon was required to isolate the 'A' ESW pump and enter the associated 45 day TS action statement. The finding is of very low safety significance because it did not represent the loss of a TS train for greater than its allowed outage time. The cause of the finding is related to the cross-cutting aspect of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take appropriate corrective actions to address a safety issue regarding corrosion in

the ESW instrument lines. [P.1(d)]
Inspection Report# : 2009005 *(pdf)*

Significance: G Oct 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Battery Capacity to Recover from Station Blackout
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current (AC) Power," because Exelon's coping analysis did not determine whether the battery capability and capacity was sufficient to recover AC power at the end of the required coping period. Specifically, Exelon's battery sizing and station blackout (SBO) load profile calculation did not include those loads necessary to recover AC power, such as starting an emergency diesel generator (EDG) or closing 4 kV switchgear breakers. As a result, the calculation did not verify there was adequate direct current (DC) voltage available to critical equipment during the SBO coping period. Exelon entered the issue into their corrective action program and performed and operability assessment which determined the battery was operable.

This issue was more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events. The team determined the finding was of very low safety significance because it was a design deficiency subsequently confirmed not to result in a loss of operability or functionality. The finding did not have a cross-cutting aspect because it was determined to be a legacy issue not considered to be indicative of current licensee performance. (Section 1R21.2.1.1)

Inspection Report# : 2009006 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Test 480 Volt Motor Control Unit Circuit Breakers
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to establish a test program for all safety-related 480 volt motor control unit (MCU) circuit breakers to assure that necessary testing was performed to demonstrate that they would perform the safety-related function in service. Specifically, in 2004, Exelon inappropriately classified certain safety related 480 volt molded-case circuit breakers as run-to-failure in the Performance Centered Maintenance (PCM) process, which resulted in the breakers receiving no planned preventive maintenance or testing. Exelon entered this issue into the Corrective Action Program (CAP) for resolution as Issue Report (IR) 948232. Exelon's corrective actions included: reclassifying all safety-related 480 volt MCUs as either "critical" or "non-critical," a formal review of the vendor's technical bulletin for applicability; and an extent of condition review of all direct current MCUs and 4 kilovolt circuit breakers. Also, preventive maintenance and testing was planned for all in-service 480 volt MCUs that had gone overdue because they were inappropriately classified as "run-to-failure."

This finding is more than minor because, if left uncorrected, the performance deficiency would lead to a more significant safety concern. Specifically, the installed molded case circuit breakers classified as run-to-failure had received no periodic planned maintenance or tests and were beyond the manufacturer's design life. Based on operating experience, this would result in a breaker being slow to trip or sticking in the "on" position after an over-current condition. The inspectors assessed the finding using Phase 1 of IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" and determined the finding to be of very low safety significance because the issue was a qualification deficiency confirmed not to result in loss of operability per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." Since the change to the PCM process was made in 2004, the inspectors determined that this finding was not reflective of current licensee performance and, therefore, did not have a cross cutting aspect.

Inspection Report# : 2009004 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct 480V Breaker Thermography
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failing to correct a condition adverse to quality associated with the performance of thermography on safety-related breakers. Specifically, although Exelon identified that the failure to perform thermography on breakers in a loaded condition was a causal factor for an electrical fault that occurred in January 2009, Exelon did not implement proper corrective actions to ensure that applicable future thermography examinations would be conducted while the equipment was in a loaded condition. Exelon entered this issue into the CAP as IR 874599, Assignment 58. Corrective actions included adding 48 breakers to the list of breakers that will be loaded prior to thermography and creating an assignment to formally assess the remaining breakers that may not receive routine thermography due to not being in a loaded condition.

The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using Phase 1 of IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" and determined the finding to be of very low safety significance because it was not a design or qualification deficiency, did not represent a loss of system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take appropriate corrective actions to address a safety issue [P.1(d)]. Specifically, although the failure to perform thermography on breakers in loaded conditions was identified as a causal factor for an electrical fault, actions were not taken in a timely manner to ensure loaded conditions for applicable future thermography examinations

Inspection Report# : 2009004 *(pdf)*

Significance: G Jun 17, 2009
Identified By: NRC
Item Type: FIN Finding
Failure to Adequately Assess Erratic Time Delay Relay Operation on Unit 2 HPCI Operability
The inspectors identified a Green finding associated with the failure to adequately assess erratic time delay relay operation on Unit 2 High Pressure Coolant Injection (HPCI) system operability in a timely manner commensurate with the potential safety significance. Following a failed surveillance test, the Unit 2 HPCI system was considered operable despite having no "as-left" data for a system time delay relay, because of erratic operation, and failing to adequately address the relay's design basis function. This finding is more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination Process for Reactor Inspection Findings for At-Power Situations" and determined the finding to be of very low safety significance (Green) because it did not represent a loss of safety function of a single train. This finding has a crosscutting aspect in Human Performance, Decision-Making, because Exelon did not make a safety-significant decision using a systematic process, especially when faced with uncertain or unexpected plant conditions, to ensure safety is maintained [H.1(a)]. This included not obtaining timely interdisciplinary input and review on the safety significant decision (H.1(a)).

Inspection Report# : 2009003 *(pdf)*

Significance: SL-IV Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Obtain License Amendment for TS Bases Change
The inspectors identified a Severity Level IV NCV of 10 CFR 50.59, "Changes, Test, and Experiment," for failing to obtain a Technical Specification (TS) license amendment for a change made to the TS Bases concerning offsite power

source operability. Changes made to TS Bases 3/4.8.1 required a change in the TS, because the change caused the bases to be in direct conflict with the requirements of TS Limiting Condition for Operation 3.8.1, “AC Sources Operating,” through the application of associated TS surveillance requirements. Exelon entered this issue into the CAP and issued night orders to operators which required declaring an offsite power supply inoperable when an offsite power supply feeder breaker became unavailable to an emergency bus.

Because this was a violation of 10 CFR 50.59, it was considered to be a violation which potentially impedes or impacts the regulatory process. Therefore, such violations are characterized using the traditional enforcement process. In this case, the licensee failed to perform an adequate safety evaluation in accordance with 10 CFR 50.59 because the approved change to the technical specification basis was in conflict with the TS surveillance requirements. This change required prior approval from the NRC before its implementation. Comparing this item to the examples in NUREG 1600, Supplement I, ”Reactor Operations,” this finding is more than minor because NRC approval would have been required. The inspectors completed a Significance Determination Review using NRC IMC 0609, Attachment 4, Phase 1 – Initial Screening and Characterization of Findings. Using the Phase I Screening worksheet the finding was determined to be of very low safety significance (Green) since the finding did not represent an actual loss of safety function for greater than the TS allowed outage time. Comparing this item to the examples in NUREG 1600, Supplement I, this finding is similar to Item D.5, “Violations of 10 CFR 50.59 that result in conditions evaluated as having very low safety significance (i.e., Green) by the SDP.” This is an example of a Severity Level IV violation. Since the TS Bases change was made in 2000, the inspectors determined that this finding was not reflective of current licensee performance and, therefore, did not have a cross-cutting aspect.

Inspection Report# : 2009002 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Design Control for Reactor Building Temperatures
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, “Design Control,” for the failure to translate minimum room temperatures assumed in an isolation actuation instrumentation setpoint calculation into Unit 1 and 2 procedures such that reactor building room temperatures were maintained above the minimum assumed. As a result, the reactor enclosure and refueling area ventilation systems were not operated to assure that room temperatures were maintained above the minimum assumed in design basis calculations. Exelon entered the issue into the Corrective Action Program (CAP) for resolution.

This finding was more than minor because it was associated with the Design Control attribute of the Barrier Integrity cornerstone, and affected the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers, including containment, protect the public from radionuclide releases caused by accidents or event. This finding was determined to be of very low safety significance because it did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, and heat removal components. This finding has a cross-cutting aspect in Human Performance, Decision Making, because the licensee did not make a safety significant decision using a systematic process to ensure safety was maintained [H.1(a)]. Specifically, the decision to operate the reactor buildings at lower temperatures was made using an informal process within operations, therefore interdisciplinary input and a review by engineering and other support organizations was not obtained

Inspection Report# : 2009002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : March 01, 2010

Limerick 2
1Q/2010 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure Adequate Cooling Water Flow to Residual Heat Removal Room Unit Cooler
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for improperly positioning the Emergency Service Water (ESW) throttle valve to the Unit 1 'A' Residual Heat Removal (RHR) room unit cooler during an ESW flow balance surveillance test in April 2008. During the test, Exelon failed to adequately evaluate ESW flow data, and established ESW flow to the unit cooler at less than the minimum required. This rendered the 'A' RHR room unit cooler incapable of removing its design heat load for a period of approximately 13 months. Exelon entered this issue into their corrective action program for resolution.

This finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone, and it impacted the cornerstone objective of ensuring the availability and capability of systems that respond to initiating events to prevent undesirable consequences. Exelon's failure to accurately evaluate test data resulted in an inadequate ESW flow rate through the 'A' RHR room unit cooler, rendering it incapable of removing its design heat load. The finding is of very low safety significance because it did not represent a loss of safety function of a TS train or risk-significant non-TS train. The cause of the finding is related to the cross-cutting aspect of Human Performance, Work Practices Component because Exelon personnel did not utilize adequate human error prevention techniques, such as self and peer checking, to ensure work activities were performed properly. [H.4(a)]
Inspection Report# : 2009005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify Degraded Instrument Line in Emergency Service Water System
The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for Exelon's failure to identify a condition adverse to quality associated with the 'A' ESW pump discharge pressure instrument line. Specifically, Exelon had previous opportunity to identify and repair a degraded 'A' ESW instrument line following a leak on a similar instrument line in August 2008. However, the degraded condition of the 'A' instrument line was not detected until it resulted in a through-wall leak on November 7, 2009. In response to the leak, Exelon was required to isolate the 'A' ESW pump and enter the associated 45-day TS action statement. Exelon entered this issue into their corrective action program as Issue Report (IR) 990204 and IR 993012. Corrective actions included performing an investigation and scheduling extent of condition testing on the remaining 18 similar instrument lines.

The finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone, and it impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, upon discovery of the through wall leak, Exelon was required to isolate the 'A' ESW pump and enter the associated 45 day TS action statement. The finding is of very low safety significance because it did not represent the loss of a TS train for greater than its allowed outage time. The cause of the finding is related to the cross-cutting aspect of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take appropriate corrective actions to address a safety issue regarding corrosion in

the ESW instrument lines. [P.1(d)]
Inspection Report# : 2009005 *(pdf)*

Significance: G Oct 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Battery Capacity to Recover from Station Blackout
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current (AC) Power," because Exelon's coping analysis did not determine whether the battery capability and capacity was sufficient to recover AC power at the end of the required coping period. Specifically, Exelon's battery sizing and station blackout (SBO) load profile calculation did not include those loads necessary to recover AC power, such as starting an emergency diesel generator (EDG) or closing 4 kV switchgear breakers. As a result, the calculation did not verify there was adequate direct current (DC) voltage available to critical equipment during the SBO coping period. Exelon entered the issue into their corrective action program and performed and operability assessment which determined the battery was operable.

This issue was more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events. The team determined the finding was of very low safety significance because it was a design deficiency subsequently confirmed not to result in a loss of operability or functionality. The finding did not have a cross-cutting aspect because it was determined to be a legacy issue not considered to be indicative of current licensee performance. (Section 1R21.2.1.1)

Inspection Report# : 2009006 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Test 480 Volt Motor Control Unit Circuit Breakers
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to establish a test program for all safety-related 480 volt motor control unit (MCU) circuit breakers to assure that necessary testing was performed to demonstrate that they would perform the safety-related function in service. Specifically, in 2004, Exelon inappropriately classified certain safety related 480 volt molded-case circuit breakers as run-to-failure in the Performance Centered Maintenance (PCM) process, which resulted in the breakers receiving no planned preventive maintenance or testing. Exelon entered this issue into the Corrective Action Program (CAP) for resolution as Issue Report (IR) 948232. Exelon's corrective actions included: reclassifying all safety-related 480 volt MCUs as either "critical" or "non-critical," a formal review of the vendor's technical bulletin for applicability; and an extent of condition review of all direct current MCUs and 4 kilovolt circuit breakers. Also, preventive maintenance and testing was planned for all in-service 480 volt MCUs that had gone overdue because they were inappropriately classified as "run-to-failure."

This finding is more than minor because, if left uncorrected, the performance deficiency would lead to a more significant safety concern. Specifically, the installed molded case circuit breakers classified as run-to-failure had received no periodic planned maintenance or tests and were beyond the manufacturer's design life. Based on operating experience, this would result in a breaker being slow to trip or sticking in the "on" position after an over-current condition. The inspectors assessed the finding using Phase 1 of IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" and determined the finding to be of very low safety significance because the issue was a qualification deficiency confirmed not to result in loss of operability per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." Since the change to the PCM process was made in 2004, the inspectors determined that this finding was not reflective of current licensee performance and, therefore, did not have a cross cutting aspect.

Inspection Report# : 2009004 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct 480V Breaker Thermography
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failing to correct a condition adverse to quality associated with the performance of thermography on safety-related breakers. Specifically, although Exelon identified that the failure to perform thermography on breakers in a loaded condition was a causal factor for an electrical fault that occurred in January 2009, Exelon did not implement proper corrective actions to ensure that applicable future thermography examinations would be conducted while the equipment was in a loaded condition. Exelon entered this issue into the CAP as IR 874599, Assignment 58. Corrective actions included adding 48 breakers to the list of breakers that will be loaded prior to thermography and creating an assignment to formally assess the remaining breakers that may not receive routine thermography due to not being in a loaded condition.

The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using Phase 1 of IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" and determined the finding to be of very low safety significance because it was not a design or qualification deficiency, did not represent a loss of system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take appropriate corrective actions to address a safety issue [P.1(d)]. Specifically, although the failure to perform thermography on breakers in loaded conditions was identified as a causal factor for an electrical fault, actions were not taken in a timely manner to ensure loaded conditions for applicable future thermography examinations

Inspection Report# : 2009004 *(pdf)*

Significance: G Jun 17, 2009
Identified By: NRC
Item Type: FIN Finding
Failure to Adequately Assess Erratic Time Delay Relay Operation on Unit 2 HPCI Operability
The inspectors identified a Green finding associated with the failure to adequately assess erratic time delay relay operation on Unit 2 High Pressure Coolant Injection (HPCI) system operability in a timely manner commensurate with the potential safety significance. Following a failed surveillance test, the Unit 2 HPCI system was considered operable despite having no "as-left" data for a system time delay relay, because of erratic operation, and failing to adequately address the relay's design basis function. This finding is more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination Process for Reactor Inspection Findings for At-Power Situations" and determined the finding to be of very low safety significance (Green) because it did not represent a loss of safety function of a single train. This finding has a crosscutting aspect in Human Performance, Decision-Making, because Exelon did not make a safety-significant decision using a systematic process, especially when faced with uncertain or unexpected plant conditions, to ensure safety is maintained [H.1(a)]. This included not obtaining timely interdisciplinary input and review on the safety significant decision (H.1(a)).

Inspection Report# : 2009003 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : May 26, 2010

Limerick 2
2Q/2010 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure Adequate Cooling Water Flow to Residual Heat Removal Room Unit Cooler
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for improperly positioning the Emergency Service Water (ESW) throttle valve to the Unit 1 'A' Residual Heat Removal (RHR) room unit cooler during an ESW flow balance surveillance test in April 2008. During the test, Exelon failed to adequately evaluate ESW flow data, and established ESW flow to the unit cooler at less than the minimum required. This rendered the 'A' RHR room unit cooler incapable of removing its design heat load for a period of approximately 13 months. Exelon entered this issue into their corrective action program for resolution.

This finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone, and it impacted the cornerstone objective of ensuring the availability and capability of systems that respond to initiating events to prevent undesirable consequences. Exelon's failure to accurately evaluate test data resulted in an inadequate ESW flow rate through the 'A' RHR room unit cooler, rendering it incapable of removing its design heat load. The finding is of very low safety significance because it did not represent a loss of safety function of a TS train or risk-significant non-TS train. The cause of the finding is related to the cross-cutting aspect of Human Performance, Work Practices Component because Exelon personnel did not utilize adequate human error prevention techniques, such as self and peer checking, to ensure work activities were performed properly. [H.4(a)]
Inspection Report# : 2009005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify Degraded Instrument Line in Emergency Service Water System
The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for Exelon's failure to identify a condition adverse to quality associated with the 'A' ESW pump discharge pressure instrument line. Specifically, Exelon had previous opportunity to identify and repair a degraded 'A' ESW instrument line following a leak on a similar instrument line in August 2008. However, the degraded condition of the 'A' instrument line was not detected until it resulted in a through-wall leak on November 7, 2009. In response to the leak, Exelon was required to isolate the 'A' ESW pump and enter the associated 45-day TS action statement. Exelon entered this issue into their corrective action program as Issue Report (IR) 990204 and IR 993012. Corrective actions included performing an investigation and scheduling extent of condition testing on the remaining 18 similar instrument lines.

The finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone, and it impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, upon discovery of the through wall leak, Exelon was required to isolate the 'A' ESW pump and enter the associated 45 day TS action statement. The finding is of very low safety significance because it did not represent the loss of a TS train for greater than its allowed outage time. The cause of the finding is related to the cross-cutting aspect of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take appropriate corrective actions to address a safety issue regarding corrosion in

the ESW instrument lines. [P.1(d)]
Inspection Report# : 2009005 *(pdf)*

Significance: G Oct 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Battery Capacity to Recover from Station Blackout
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current (AC) Power," because Exelon's coping analysis did not determine whether the battery capability and capacity was sufficient to recover AC power at the end of the required coping period. Specifically, Exelon's battery sizing and station blackout (SBO) load profile calculation did not include those loads necessary to recover AC power, such as starting an emergency diesel generator (EDG) or closing 4 kV switchgear breakers. As a result, the calculation did not verify there was adequate direct current (DC) voltage available to critical equipment during the SBO coping period. Exelon entered the issue into their corrective action program and performed and operability assessment which determined the battery was operable.

This issue was more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events. The team determined the finding was of very low safety significance because it was a design deficiency subsequently confirmed not to result in a loss of operability or functionality. The finding did not have a cross-cutting aspect because it was determined to be a legacy issue not considered to be indicative of current licensee performance. (Section 1R21.2.1.1)

Inspection Report# : 2009006 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Test 480 Volt Motor Control Unit Circuit Breakers
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to establish a test program for all safety-related 480 volt motor control unit (MCU) circuit breakers to assure that necessary testing was performed to demonstrate that they would perform the safety-related function in service. Specifically, in 2004, Exelon inappropriately classified certain safety related 480 volt molded-case circuit breakers as run-to-failure in the Performance Centered Maintenance (PCM) process, which resulted in the breakers receiving no planned preventive maintenance or testing. Exelon entered this issue into the Corrective Action Program (CAP) for resolution as Issue Report (IR) 948232. Exelon's corrective actions included: reclassifying all safety-related 480 volt MCUs as either "critical" or "non-critical," a formal review of the vendor's technical bulletin for applicability; and an extent of condition review of all direct current MCUs and 4 kilovolt circuit breakers. Also, preventive maintenance and testing was planned for all in-service 480 volt MCUs that had gone overdue because they were inappropriately classified as "run-to-failure."

This finding is more than minor because, if left uncorrected, the performance deficiency would lead to a more significant safety concern. Specifically, the installed molded case circuit breakers classified as run-to-failure had received no periodic planned maintenance or tests and were beyond the manufacturer's design life. Based on operating experience, this would result in a breaker being slow to trip or sticking in the "on" position after an over-current condition. The inspectors assessed the finding using Phase 1 of IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" and determined the finding to be of very low safety significance because the issue was a qualification deficiency confirmed not to result in loss of operability per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." Since the change to the PCM process was made in 2004, the inspectors determined that this finding was not reflective of current licensee performance and, therefore, did not have a cross cutting aspect.

Inspection Report# : 2009004 *(pdf)*

Significance: G Sep 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct 480V Breaker Thermography
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failing to correct a condition adverse to quality associated with the performance of thermography on safety-related breakers. Specifically, although Exelon identified that the failure to perform thermography on breakers in a loaded condition was a causal factor for an electrical fault that occurred in January 2009, Exelon did not implement proper corrective actions to ensure that applicable future thermography examinations would be conducted while the equipment was in a loaded condition. Exelon entered this issue into the CAP as IR 874599, Assignment 58. Corrective actions included adding 48 breakers to the list of breakers that will be loaded prior to thermography and creating an assignment to formally assess the remaining breakers that may not receive routine thermography due to not being in a loaded condition.

The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using Phase 1 of IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" and determined the finding to be of very low safety significance because it was not a design or qualification deficiency, did not represent a loss of system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take appropriate corrective actions to address a safety issue [P.1(d)]. Specifically, although the failure to perform thermography on breakers in loaded conditions was identified as a causal factor for an electrical fault, actions were not taken in a timely manner to ensure loaded conditions for applicable future thermography examinations

Inspection Report# : 2009004 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : September 02, 2010

Limerick 2
3Q/2010 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Take Compensatory Action for Inoperable Fire Door
The inspectors identified a Green NCV of Limerick Generating Station operating License Condition 2.C.3, in that Exelon failed to take compensatory actions for an inoperable fire door. Specifically, on two occasions a required fire door was found in a condition where the latching mechanism did not function. Although issue reports (IRs) were written which identified this door to be a Technical Requirements Manual (TRM) fire door, actions were not taken to station the required hourly fire watch. Corrective actions included setting the required hourly fire watches, distributing guidance to all senior licensed operators, and implementing procedural changes to clarify the requirements of fire doors for future operability determinations.

The finding was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This issue was found to be of very low safety significance (Green) based upon a Phase 2 SDP screening. The inspectors determined that this finding did not have a cross-cutting because the incorrect operability decisions were based on a 1999 engineering evaluation and, therefore, was not reflective of current licensee performance.

Inspection Report# : 2010004 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Adequate PM on EDGs
The inspectors identified a Green NCV of Limerick Unit 2 Technical Specification (TS) 6.8.1, “Procedures and Programs,” in that Exelon did not provide an adequate procedure for preventive maintenance (PM) of the Limerick Emergency Diesel Generator (EDG) lube oil (LO) filter bypass valves. As a result, Exelon did not identify that the EDG D23 LO filter bypass valves were degraded and allowed oil to bypass the filter during engine operation. This condition, combined with historical foreign material in the LO system, led to the failure of the EDG D23 number 5 upper piston assembly during a 24-hour endurance test run on May 5, 2010. Corrective actions implemented included repairing the damage to D23, performing a flush of the D23 LO system, revising the applicable PM procedure to include specific instructions for inspecting the LO filter bypass valves, and revising performance monitoring guidance to ensure spuriously lifting LO filter bypass valves would be identified in the future.

The finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) in accordance with Inspection Manual Chapter (IMC) 0609, Appendix A, “Determining the Significance of Reactor Inspection Findings for At-Power Situations,” using SDP Phases 1, 2, and 3. This finding has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not provide complete, accurate and up-to-date design documentation, procedures, and work packages [H.2

(c)]. Specifically, Exelon did not provide site engineers with complete and accurate resources to ensure performance centered maintenance (PCM) template revisions were thoroughly reviewed and implemented.

Inspection Report# : 2010004 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure Adequate Cooling Water Flow to Residual Heat Removal Room Unit Cooler
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for improperly positioning the Emergency Service Water (ESW) throttle valve to the Unit 1 'A' Residual Heat Removal (RHR) room unit cooler during an ESW flow balance surveillance test in April 2008. During the test, Exelon failed to adequately evaluate ESW flow data, and established ESW flow to the unit cooler at less than the minimum required. This rendered the 'A' RHR room unit cooler incapable of removing its design heat load for a period of approximately 13 months. Exelon entered this issue into their corrective action program for resolution.

This finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone, and it impacted the cornerstone objective of ensuring the availability and capability of systems that respond to initiating events to prevent undesirable consequences. Exelon's failure to accurately evaluate test data resulted in an inadequate ESW flow rate through the 'A' RHR room unit cooler, rendering it incapable of removing its design heat load. The finding is of very low safety significance because it did not represent a loss of safety function of a TS train or risk-significant non-TS train. The cause of the finding is related to the cross-cutting aspect of Human Performance, Work Practices Component because Exelon personnel did not utilize adequate human error prevention techniques, such as self and peer checking, to ensure work activities were performed properly. [H.4(a)]
Inspection Report# : 2009005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify Degraded Instrument Line in Emergency Service Water System
The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for Exelon's failure to identify a condition adverse to quality associated with the 'A' ESW pump discharge pressure instrument line. Specifically, Exelon had previous opportunity to identify and repair a degraded 'A' ESW instrument line following a leak on a similar instrument line in August 2008. However, the degraded condition of the 'A' instrument line was not detected until it resulted in a through-wall leak on November 7, 2009. In response to the leak, Exelon was required to isolate the 'A' ESW pump and enter the associated 45-day TS action statement. Exelon entered this issue into their corrective action program as Issue Report (IR) 990204 and IR 993012. Corrective actions included performing an investigation and scheduling extent of condition testing on the remaining 18 similar instrument lines.

The finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone, and it impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, upon discovery of the through wall leak, Exelon was required to isolate the 'A' ESW pump and enter the associated 45 day TS action statement. The finding is of very low safety significance because it did not represent the loss of a TS train for greater than its allowed outage time. The cause of the finding is related to the cross-cutting aspect of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take appropriate corrective actions to address a safety issue regarding corrosion in the ESW instrument lines. [P.1(d)]
Inspection Report# : 2009005 *(pdf)*

Significance: G Oct 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Battery Capacity to Recover from Station Blackout

The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50.63, “Loss of All Alternating Current (AC) Power,” because Exelon's coping analysis did not determine whether the battery capability and capacity was sufficient to recover AC power at the end of the required coping period. Specifically, Exelon's battery sizing and station blackout (SBO) load profile calculation did not include those loads necessary to recover AC power, such as starting an emergency diesel generator (EDG) or closing 4 kV switchgear breakers. As a result, the calculation did not verify there was adequate direct current (DC) voltage available to critical equipment during the SBO coping period. Exelon entered the issue into their corrective action program and performed and operability assessment which determined the battery was operable.

This issue was more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events. The team determined the finding was of very low safety significance because it was a design deficiency subsequently confirmed not to result in a loss of operability or functionality. The finding did not have a cross-cutting aspect because it was determined to be a legacy issue not considered to be indicative of current licensee performance. (Section 1R21.2.1.1)

Inspection Report# : 2009006 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : November 29, 2010

Limerick 2
4Q/2010 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: SL-IV Dec 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Update the UFSAR Consistent with Plant Conditions as Required
The inspectors identified a Severity Level lV (SLIV) NCV of 10 CFR Part 50.71(e) in that Exelon failed on multiple occasions to revise the Updated Final Safety Analysis Report (UFSAR) with information consistent with plant conditions. Specifically, Exelon personnel failed to incorporate four previously identified UFSAR inconsistencies into the September 2010 UFSAR update as required.

The inspectors determined that the failure to update the UFSAR in accordance with 10 CFR 50.71(e) was a performance deficiency that was reasonably within Exelon's ability to foresee and correct, and should have been prevented. Because the issue had the potential to affect the NRC's ability to perform its regulatory function, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.1.d.3 from the NRC Enforcement Policy, the inspectors determined that the violation was a SLIV (more than minor concern that resulted in no or relatively inappreciable potential safety or security consequence) violation, because the information that was not updated in the UFSAR was not used to make an unacceptable change in the facility nor did it impact a licensing or safety decision by the NRC.

In accordance with inspection manual chapter 0612, appendix B, this issue was not assigned a cross-cutting aspect.
Inspection Report# : 2010007 *(pdf)*

Significance: G Dec 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Three of Four RHR Unit Coolers Unreliable due to Various Planned and Unptanned Gonditions (Silting).
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion XVl, "Corrective Action," in that Exelon failed to correct a condition adverse to quality for a safetyrelated support system that was essential to successful mitigating system operation.

The inspectors determined that the failure to correct a condition adverse to quality in accordance with 10 CFR 50 Appendix B, Criterion XVl, during the timeframe of June 1, 2008 to September 14,2008, contributed to the unreliability of the 1C-V210 unit cooler and was a performance deficiency. Specifically, Exelon did not initiate bi-weekly flushing per RT-6-011-603-0 of the 1C-V210 unit cooler to minimize the effects of silt build up. This finding is more than minor because it affected the equipment performance attribute of the Mitigating System cornerstone and the associated cornerstone objective of ensuring the reliability and availability of systems that respond to initiating events to prevent undesirable consequences, This issue was also similar to example 3.j. in NRC IMC 0612, Appendix E, "Examples of Minor lssues," in that it resulted in a condition where there was a reasonable doubt on the operability of the 1C-V210 unit cooler. The inspectors assessed this finding in accordance with IMC 0609, Attachment 4, Phase 1, "lnitial Screening and Characterization of Findings," and determined that it was of very low safety significance (Green) since it was determined that the error did not result in a loss of the system's safety function.

The inspectors determined that this violation had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, in that Exelon did not take appropriate corrective actions to address a condition adverse to quality in a timely manner, commensurate with its safety significance and complexity. Specifically, Exelon failed to take appropriate actions to initiate bi-weekly flushes of the 1C-V210 unit cooler, upon discovery of conditions conducive to silt buildup during June through September 2008. [P.1 (d)]
Inspection Report# : 2010007 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Take Compensatory Action for Inoperable Fire Door
The inspectors identified a Green NCV of Limerick Generating Station operating License Condition 2.C.3, in that Exelon failed to take compensatory actions for an inoperable fire door. Specifically, on two occasions a required fire door was found in a condition where the latching mechanism did not function. Although issue reports (IRs) were written which identified this door to be a Technical Requirements Manual (TRM) fire door, actions were not taken to station the required hourly fire watch. Corrective actions included setting the required hourly fire watches, distributing guidance to all senior licensed operators, and implementing procedural changes to clarify the requirements of fire doors for future operability determinations.

The finding was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This issue was found to be of very low safety significance (Green) based upon a Phase 2 SDP screening. The inspectors determined that this finding did not have a cross-cutting because the incorrect operability decisions were based on a 1999 engineering evaluation and, therefore, was not reflective of current licensee performance.

Inspection Report# : 2010004 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Adequate PM on EDGs
The inspectors identified a Green NCV of Limerick Unit 2 Technical Specification (TS) 6.8.1, “Procedures and Programs,” in that Exelon did not provide an adequate procedure for preventive maintenance (PM) of the Limerick Emergency Diesel Generator (EDG) lube oil (LO) filter bypass valves. As a result, Exelon did not identify that the EDG D23 LO filter bypass valves were degraded and allowed oil to bypass the filter during engine operation. This condition, combined with historical foreign material in the LO system, led to the failure of the EDG D23 number 5 upper piston assembly during a 24-hour endurance test run on May 5, 2010. Corrective actions implemented included repairing the damage to D23, performing a flush of the D23 LO system, revising the applicable PM procedure to include specific instructions for inspecting the LO filter bypass valves, and revising performance monitoring guidance to ensure spuriously lifting LO filter bypass valves would be identified in the future.

The finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) in accordance with Inspection Manual Chapter (IMC) 0609, Appendix A, “Determining the Significance of Reactor Inspection Findings for At-Power Situations,” using SDP Phases 1, 2, and 3. This finding has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not provide complete, accurate and up-to-date design documentation, procedures, and work packages [H.2 (c)]. Specifically, Exelon did not provide site engineers with complete and accurate resources to ensure performance centered maintenance (PCM) template revisions were thoroughly reviewed and implemented.

Inspection Report# : 2010004 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : March 03, 2011

Limerick 2
1Q/2011 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: SL-IV Dec 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Update the UFSAR Consistent with Plant Conditions as Required
The inspectors identified a Severity Level lV (SLIV) NCV of 10 CFR Part 50.71(e) in that Exelon failed on multiple occasions to revise the Updated Final Safety Analysis Report (UFSAR) with information consistent with plant conditions. Specifically, Exelon personnel failed to incorporate four previously identified UFSAR inconsistencies into the September 2010 UFSAR update as required.

The inspectors determined that the failure to update the UFSAR in accordance with 10 CFR 50.71(e) was a performance deficiency that was reasonably within Exelon's ability to foresee and correct, and should have been prevented. Because the issue had the potential to affect the NRC's ability to perform its regulatory function, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.1.d.3 from the NRC Enforcement Policy, the inspectors determined that the violation was a SLIV (more than minor concern that resulted in no or relatively inappreciable potential safety or security consequence) violation, because the information that was not updated in the UFSAR was not used to make an unacceptable change in the facility nor did it impact a licensing or safety decision by the NRC.

In accordance with inspection manual chapter 0612, appendix B, this issue was not assigned a cross-cutting aspect.
Inspection Report# : 2010007 *(pdf)*

Significance: G Dec 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Three of Four RHR Unit Coolers Unreliable due to Various Planned and Unplanned Conditions (Silting).
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion XVl, "Corrective Action," in that Exelon failed to correct a condition adverse to quality for a safetyrelated support system that was essential to successful mitigating system operation.

The inspectors determined that the failure to correct a condition adverse to quality in accordance with 10 CFR 50 Appendix B, Criterion XVl, during the timeframe of June 1, 2008 to September 14,2008, contributed to the unreliability of the 1C-V210 unit cooler and was a performance deficiency. Specifically, Exelon did not initiate bi-weekly flushing per RT-6-011-603-0 of the 1C-V210 unit cooler to minimize the effects of silt build up. This finding is more than minor because it affected the equipment performance attribute of the Mitigating System cornerstone and the associated cornerstone objective of ensuring the reliability and availability of systems that respond to initiating events to prevent undesirable consequences, This issue was also similar to example 3.j. in NRC IMC 0612, Appendix E, "Examples of Minor lssues," in that it resulted in a condition where there was a reasonable doubt on the operability of the 1C-V210 unit cooler. The inspectors assessed this finding in accordance with IMC 0609, Attachment 4, Phase 1, "lnitial Screening and Characterization of Findings," and determined that it was of very low safety significance (Green) since it was determined that the error did not result in a loss of the system's safety function.

The inspectors determined that this violation had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, in that Exelon did not take appropriate corrective actions to address a condition adverse to quality in a timely manner, commensurate with its safety significance and complexity. Specifically, Exelon failed to take appropriate actions to initiate bi-weekly flushes of the 1C-V210 unit cooler, upon discovery of conditions conducive to silt buildup during June through September 2008. [P.1 (d)]
Inspection Report# : 2010007 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Take Compensatory Action for Inoperable Fire Door
The inspectors identified a Green NCV of Limerick Generating Station operating License Condition 2.C.3, in that Exelon failed to take compensatory actions for an inoperable fire door. Specifically, on two occasions a required fire door was found in a condition where the latching mechanism did not function. Although issue reports (IRs) were written which identified this door to be a Technical Requirements Manual (TRM) fire door, actions were not taken to station the required hourly fire watch. Corrective actions included setting the required hourly fire watches, distributing guidance to all senior licensed operators, and implementing procedural changes to clarify the requirements of fire doors for future operability determinations.

The finding was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This issue was found to be of very low safety significance (Green) based upon a Phase 2 SDP screening. The inspectors determined that this finding did not have a cross-cutting because the incorrect operability decisions were based on a 1999 engineering evaluation and, therefore, was not reflective of current licensee performance.

Inspection Report# : 2010004 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Adequate PM on EDGs
The inspectors identified a Green NCV of Limerick Unit 2 Technical Specification (TS) 6.8.1, “Procedures and Programs,” in that Exelon did not provide an adequate procedure for preventive maintenance (PM) of the Limerick Emergency Diesel Generator (EDG) lube oil (LO) filter bypass valves. As a result, Exelon did not identify that the EDG D23 LO filter bypass valves were degraded and allowed oil to bypass the filter during engine operation. This condition, combined with historical foreign material in the LO system, led to the failure of the EDG D23 number 5 upper piston assembly during a 24-hour endurance test run on May 5, 2010. Corrective actions implemented included repairing the damage to D23, performing a flush of the D23 LO system, revising the applicable PM procedure to include specific instructions for inspecting the LO filter bypass valves, and revising performance monitoring guidance to ensure spuriously lifting LO filter bypass valves would be identified in the future.

The finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) in accordance with Inspection Manual Chapter (IMC) 0609, Appendix A, “Determining the Significance of Reactor Inspection Findings for At-Power Situations,” using SDP Phases 1, 2, and 3. This finding has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not provide complete, accurate and up-to-date design documentation, procedures, and work packages [H.2 (c)]. Specifically, Exelon did not provide site engineers with complete and accurate resources to ensure performance centered maintenance (PCM) template revisions were thoroughly reviewed and implemented.

Inspection Report# : 2010004 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Address Repeat TS Response Time Test Failures (Section 4OA2.2)
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action Program," because Exelon did not adequately evaluate and correct a condition adverse to quality regarding repeat failures of a Technical Specification (TS) surveillance test (ST). Specifically, on July 13, 2010, Exelon generated issue report (IR) 1091132 to document that ST-2-041-909-2, the Unit 2 Main Seam Line (MSL) Flow – High Response Time Test, had failed its past two performances. In both instances, in October 2008 and July 2010, multiple response time values exceeded the TS requirements, and Exelon had to replace several relays to bring the values back into compliance. After the 2008 failure Exelon performed an apparent cause evaluation (ACE) and generated one corrective action (CA) and several action items (ACITs) to address the causes. Following the 2010 failure, Exelon did not evaluate the repeat failure or generate any additional actions. The inspectors determined that the CA and ACITs from 2008 did not thoroughly address the MSL Flow - High test failure, and the repeat test failure in 2010 was an opportunity for Exelon to re-evaluate the issue and pursue more appropriate and timely corrective actions. Exelon's failure to evaluate and correct a condition adverse to quality regarding repeat failures of a TS surveillance test was determined to be a performance deficiency (PD).

The PD was determined to be more than minor because it was associated with the System, Structure, and Component & Barrier Performance attribute of the Reactor Safety - Barrier Integrity cornerstone. The PD adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance (Green) in accordance with Inspection Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," because it did not represent an actual open pathway in the physical integrity of reactor containment. The inspectors determined this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not thoroughly evaluate the repeat MSL response time test failures to ensure the underlying causes were identified and resolved. [P.1(c)] (Section 40A2.2)

Inspection Report# : 2011002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : June 07, 2011

Limerick 2
2Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Position Recirculation Isolation Valves in Accordance with Clearance
A Green, self-revealing NCV of Technical Specification (TS) 6.8.1, "Procedures and Programs," was identified for failure to position the Unit 2 recirculation loop isolation valves in accordance with the clearance instruction. As a result, the decay heat removal flow path, as provided by Unit 2 'A' residual heat removal (RHR), was in a degraded condition from April 6, 2011 until April 12, 2011, when the valve mispositioning was corrected. In addition, if the RHR system had been aligned to the Shutdown Cooling mode with the valves mispositioned in the open position, a large portion of the cooling flow would have bypassed the core, significantly impacting decay heat removal capability. Exelon entered the issue into the Corrective action Program (CAP) for resolution.

The inspectors determined that the failure to position the Unit 2 'A' loop recirculation pump suction and discharge valves to the closed positions in accordance with a clearance is a performance deficiency. This issue is more than minor because it was associated with the Configuration Control attribute of the Initiating Events cornerstone (i.e., shutdown equipment lineup), and it affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was determined to be of very low safety significance (Green) using IMC 0609, "Significance Determination Process", Appendix G, "Shutdown Operations Significance Determination Process" because the finding did not require quantitative assessment (i.e., the finding did not degrade the ability to recover decay heat removal once lost). Exelon entered this issue into the CAP for resolution. Corrective actions included remediating the reactor operator who applied the main control room tag and revising the cross check program to require a concurrent verification check on clearance applications for valves being de-energized with main control room indicators.

The inspectors determined that this issue has a cross-cutting aspect in the area of Human Performance, Work Practices, because Exelon did not properly use human error prevention techniques (e.g., self and peer checking), commensurate with the risk of the assigned task. [H.4(a)] (Section 1R20)

Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Identify Adverse Trend regarding Out of Calibration Instrumentatio
A Green self-revealing finding was identified for Exelon's failure to identify and correct an adverse trend regarding out of calibration temperature switches in the Unit 1 and Unit 2 stator cooling water (SCW) systems. Specifically, between 1990 and 2011 the SCW outlet temperature switches were checked by Exelon on a two year frequency and found to be out of calibration approximately 50 percent of the time. Since 2005, the switches were found out of calibration nearly 70 percent of the time, often by a significant amount. Each time the switches were found of out calibration, they were recalibrated within acceptable limits, but the adverse trend was not recognized. The inspectors determined that Exelon's failure to identify and correct the adverse trend of out of calibration SCW outlet temperature switches was a performance deficiency which was reasonably within the licensee's ability to foresee and prevent. Specifically, Exelon's Performance Monitoring Program, described in ER-AA-2003, should have identified the trend during engineer's annual review of cause and repair codes for completed work orders. Exelon entered the issue into the CAP for resolution.

The finding was more than minor because it was associated with the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, on February 25, 2011, the out of calibration SCW outlet temperature switches resulted in a SCW runback and manual scram of Limerick Unit 2 when they actuated 15 degrees lower than their intended set point. The finding was determined to be of very low safety significance (Green) in accordance with a Phase 1 of IMC 0609, “Significance Determination Process,” because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not identify the trend of out-of-calibration temperature switches in a timely manner. Exelon relied on the implementation of a thorough Performance Monitoring Program to supplement their CAP in the specific area of instrument performance monitoring and trending, and this program failed to detect the adverse trend in instrument performance. [P.1(b)]
Inspection Report# : 2011003 *(pdf)*

Mitigating Systems

Significance: SL-IV Nov 19, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Update the UFSAR Consistent with Plant Conditions as Required
The inspectors identified a Severity Level lV (SLIV) NCV of 10 CFR Part 50.71(e) in that Exelon failed on multiple occasions to revise the Updated Final Safety Analysis Report (UFSAR) with information consistent with plant conditions. Specifically, Exelon personnel failed to incorporate four previously identified UFSAR inconsistencies into the September 2010 UFSAR update as required.

The inspectors determined that the failure to update the UFSAR in accordance with 10 CFR 50.71(e) was a performance deficiency that was reasonably within Exelon's ability to foresee and correct, and should have been prevented. Because the issue had the potential to affect the NRC's ability to perform its regulatory function, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.1.d.3 from the NRC Enforcement Policy, the inspectors determined that the violation was a SLIV (more than minor concern that resulted in no or relatively inappreciable potential safety or security consequence) violation, because the information that was not updated in the UFSAR was not used to make an unacceptable change in the facility nor did it impact a licensing or safety decision by the NRC.

In accordance with inspection manual chapter 0612, appendix B, this issue was not assigned a cross-cutting aspect.
Inspection Report# : 2010007 *(pdf)*

Significance: G Nov 19, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Three of Four RHR Unit Coolers Unreliable due to Various Planned and Unplanned Conditions (Silting).
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion XVl, "Corrective Action," in that Exelon failed to correct a condition adverse to quality for a safetyrelated support system that was essential to successful mitigating system operation.

The inspectors determined that the failure to correct a condition adverse to quality in accordance with 10 CFR 50 Appendix B, Criterion XVl, during the timeframe of June 1, 2008 to September 14,2008, contributed to the unreliability of the 1C-V210 unit cooler and was a performance deficiency. Specifically, Exelon did not initiate bi-weekly flushing per RT-6-011-603-0 of the 1C-V210 unit cooler to minimize the effects of silt build up. This finding is more than minor because it affected the equipment performance attribute of the Mitigating System cornerstone and the associated cornerstone objective of ensuring the reliability and availability of systems that

respond to initiating events to prevent undesirable consequences, This issue was also similar to example 3.j. in NRC IMC 0612, Appendix E, "Examples of Minor lssues," in that it resulted in a condition where there was a reasonable doubt on the operability of the 1C-V210 unit cooler. The inspectors assessed this finding in accordance with IMC 0609, Attachment 4, Phase 1, "lnitial Screening and Characterization of Findings," and determined that it was of very low safety significance (Green) since it was determined that the error did not
result in a loss of the system's safety function.

The inspectors determined that this violation had a cross-cutting aspect in the area of Problem ldentification and Resolution, Corrective Action Program, in that Exelon did not take appropriate corrective actions to address a condition adverse to quality in a timely manner, commensurate with its safety significance and complexity. Specifically, Exelon failed to take appropriate actions to initiate bi-weekly flushes of the 1C-V210 unit cooler, upon discovery of conditions conducive to silt buildup during June through September 2008. [P.1 (d)]
Inspection Report# : 2010007 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Take Compensatory Action for Inoperable Fire Door
The inspectors identified a Green NCV of Limerick Generating Station operating License Condition 2.C.3, in that Exelon failed to take compensatory actions for an inoperable fire door. Specifically, on two occasions a required fire door was found in a condition where the latching mechanism did not function. Although issue reports (IRs) were written which identified this door to be a Technical Requirements Manual (TRM) fire door, actions were not taken to station the required hourly fire watch. Corrective actions included setting the required hourly fire watches, distributing guidance to all senior licensed operators, and implementing procedural changes to clarify the requirements of fire doors for future operability determinations.

The finding was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This issue was found to be of very low safety significance (Green) based upon a Phase 2 SDP screening. The inspectors determined that this finding did not have a cross-cutting because the incorrect operability decisions were based on a 1999 engineering evaluation and, therefore, was not reflective of current licensee performance.

Inspection Report# : 2010004 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Adequate PM on EDGs
The inspectors identified a Green NCV of Limerick Unit 2 Technical Specification (TS) 6.8.1, “Procedures and Programs,” in that Exelon did not provide an adequate procedure for preventive maintenance (PM) of the Limerick Emergency Diesel Generator (EDG) lube oil (LO) filter bypass valves. As a result, Exelon did not identify that the EDG D23 LO filter bypass valves were degraded and allowed oil to bypass the filter during engine operation. This condition, combined with historical foreign material in the LO system, led to the failure of the EDG D23 number 5 upper piston assembly during a 24-hour endurance test run on May 5, 2010. Corrective actions implemented included repairing the damage to D23, performing a flush of the D23 LO system, revising the applicable PM procedure to include specific instructions for inspecting the LO filter bypass valves, and revising performance monitoring guidance to ensure spuriously lifting LO filter bypass valves would be identified in the future.

The finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) in accordance with Inspection Manual Chapter (IMC) 0609, Appendix A, “Determining the Significance of Reactor Inspection Findings for At-Power Situations,” using SDP Phases 1, 2, and 3. This finding has a cross-cutting aspect in the area of Human Performance, Resources, because

Exelon did not provide complete, accurate and up-to-date design documentation, procedures, and work packages [H.2 (c)]. Specifically, Exelon did not provide site engineers with complete and accurate resources to ensure performance centered maintenance (PCM) template revisions were thoroughly reviewed and implemented.

Inspection Report# : 2010004 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Address Repeat TS Response Time Test Failures (Section 4OA2.2)
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action Program," because Exelon did not adequately evaluate and correct a condition adverse to quality regarding repeat failures of a Technical Specification (TS) surveillance test (ST). Specifically, on July 13, 2010, Exelon generated issue report (IR) 1091132 to document that ST-2-041-909-2, the Unit 2 Main Seam Line (MSL) Flow – High Response Time Test, had failed its past two performances. In both instances, in October 2008 and July 2010, multiple response time values exceeded the TS requirements, and Exelon had to replace several relays to bring the values back into compliance. After the 2008 failure Exelon performed an apparent cause evaluation (ACE) and generated one corrective action (CA) and several action items (ACITs) to address the causes. Following the 2010 failure, Exelon did not evaluate the repeat failure or generate any additional actions. The inspectors determined that the CA and ACITs from 2008 did not thoroughly address the MSL Flow - High test failure, and the repeat test failure in 2010 was an opportunity for Exelon to re-evaluate the issue and pursue more appropriate and timely corrective actions. Exelon's failure to evaluate and correct a condition adverse to quality regarding repeat failures of a TS surveillance test was determined to be a performance deficiency (PD).

The PD was determined to be more than minor because it was associated with the System, Structure, and Component & Barrier Performance attribute of the Reactor Safety - Barrier Integrity cornerstone. The PD adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance (Green) in accordance with Inspection Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," because it did not represent an actual open pathway in the physical integrity of reactor containment. The inspectors determined this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not thoroughly evaluate the repeat MSL response time test failures to ensure the underlying causes were identified and resolved. [P.1(c)] (Section 40A2.2)

Inspection Report# : 2011002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : October 14, 2011

Limerick 2
3Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Position Recirculation Isolation Valves in Accordance with Clearance
A Green, self-revealing NCV of Technical Specification (TS) 6.8.1, "Procedures and Programs," was identified for failure to position the Unit 2 recirculation loop isolation valves in accordance with the clearance instruction. As a result, the decay heat removal flow path, as provided by Unit 2 'A' residual heat removal (RHR), was in a degraded condition from April 6, 2011 until April 12, 2011, when the valve mispositioning was corrected. In addition, if the RHR system had been aligned to the Shutdown Cooling mode with the valves mispositioned in the open position, a large portion of the cooling flow would have bypassed the core, significantly impacting decay heat removal capability. Exelon entered the issue into the Corrective action Program (CAP) for resolution.

The inspectors determined that the failure to position the Unit 2 'A' loop recirculation pump suction and discharge valves to the closed positions in accordance with a clearance is a performance deficiency. This issue is more than minor because it was associated with the Configuration Control attribute of the Initiating Events cornerstone (i.e., shutdown equipment lineup), and it affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was determined to be of very low safety significance (Green) using IMC 0609, "Significance Determination Process", Appendix G, "Shutdown Operations Significance Determination Process" because the finding did not require quantitative assessment (i.e., the finding did not degrade the ability to recover decay heat removal once lost). Exelon entered this issue into the CAP for resolution. Corrective actions included remediating the reactor operator who applied the main control room tag and revising the cross check program to require a concurrent verification check on clearance applications for valves being de-energized with main control room indicators.

The inspectors determined that this issue has a cross-cutting aspect in the area of Human Performance, Work Practices, because Exelon did not properly use human error prevention techniques (e.g., self and peer checking), commensurate with the risk of the assigned task. [H.4(a)] (Section 1R20)

Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Identify Adverse Trend regarding Out of Calibration Instrumentatio
A Green self-revealing finding was identified for Exelon's failure to identify and correct an adverse trend regarding out of calibration temperature switches in the Unit 1 and Unit 2 stator cooling water (SCW) systems. Specifically, between 1990 and 2011 the SCW outlet temperature switches were checked by Exelon on a two year frequency and found to be out of calibration approximately 50 percent of the time. Since 2005, the switches were found out of calibration nearly 70 percent of the time, often by a significant amount. Each time the switches were found of out calibration, they were recalibrated within acceptable limits, but the adverse trend was not recognized. The inspectors determined that Exelon's failure to identify and correct the adverse trend of out of calibration SCW outlet temperature switches was a performance deficiency which was reasonably within the licensee's ability to foresee and prevent. Specifically, Exelon's Performance Monitoring Program, described in ER-AA-2003, should have identified the trend during engineer's annual review of cause and repair codes for completed work orders. Exelon entered the issue into the CAP for resolution.

The finding was more than minor because it was associated with the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, on February 25, 2011, the out of calibration SCW outlet temperature switches resulted in a SCW runback and manual scram of Limerick Unit 2 when they actuated 15 degrees lower than their intended set point. The finding was determined to be of very low safety significance (Green) in accordance with a Phase 1 of IMC 0609, “Significance Determination Process,” because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not identify the trend of out-of-calibration temperature switches in a timely manner. Exelon relied on the implementation of a thorough Performance Monitoring Program to supplement their CAP in the specific area of instrument performance monitoring and trending, and this program failed to detect the adverse trend in instrument performance. [P.1(b)]
Inspection Report# : 2011003 *(pdf)*

Mitigating Systems

Significance: SL-IV Nov 19, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Update the UFSAR Consistent with Plant Conditions as Required
The inspectors identified a Severity Level lV (SLIV) NCV of 10 CFR Part 50.71(e) in that Exelon failed on multiple occasions to revise the Updated Final Safety Analysis Report (UFSAR) with information consistent with plant conditions. Specifically, Exelon personnel failed to incorporate four previously identified UFSAR inconsistencies into the September 2010 UFSAR update as required.

The inspectors determined that the failure to update the UFSAR in accordance with 10 CFR 50.71(e) was a performance deficiency that was reasonably within Exelon's ability to foresee and correct, and should have been prevented. Because the issue had the potential to affect the NRC's ability to perform its regulatory function, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.1.d.3 from the NRC Enforcement Policy, the inspectors determined that the violation was a SLIV (more than minor concern that resulted in no or relatively inappreciable potential safety or security consequence) violation, because the information that was not updated in the UFSAR was not used to make an unacceptable change in the facility nor did it impact a licensing or safety decision by the NRC.

In accordance with inspection manual chapter 0612, appendix B, this issue was not assigned a cross-cutting aspect.
Inspection Report# : 2010007 *(pdf)*

Significance: G Nov 19, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Three of Four RHR Unit Coolers Unreliable due to Various Planned and Unplanned Conditions (Silting).
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion XVl, "Corrective Action," in that Exelon failed to correct a condition adverse to quality for a safetyrelated support system that was essential to successful mitigating system operation.

The inspectors determined that the failure to correct a condition adverse to quality in accordance with 10 CFR 50 Appendix B, Criterion XVl, during the timeframe of June 1, 2008 to September 14,2008, contributed to the unreliability of the 1C-V210 unit cooler and was a performance deficiency. Specifically, Exelon did not initiate bi-weekly flushing per RT-6-011-603-0 of the 1C-V210 unit cooler to minimize the effects of silt build up. This finding is more than minor because it affected the equipment performance attribute of the Mitigating System cornerstone and the associated cornerstone objective of ensuring the reliability and availability of systems that

respond to initiating events to prevent undesirable consequences, This issue was also similar to example 3.j. in NRC IMC 0612, Appendix E, "Examples of Minor lssues," in that it resulted in a condition where there was a reasonable doubt on the operability of the 1C-V210 unit cooler. The inspectors assessed this finding in accordance with IMC 0609, Attachment 4, Phase 1, "lnitial Screening and Characterization of Findings," and determined that it was of very low safety significance (Green) since it was determined that the error did not result in a loss of the system's safety function.

The inspectors determined that this violation had a cross-cutting aspect in the area of Problem ldentification and Resolution, Corrective Action Program, in that Exelon did not take appropriate corrective actions to address a condition adverse to quality in a timely manner, commensurate with its safety significance and complexity. Specifically, Exelon failed to take appropriate actions to initiate bi-weekly flushes of the 1C-V210 unit cooler, upon discovery of conditions conducive to silt buildup during June through September 2008. [P.1 (d)]
Inspection Report# : 2010007 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Address Repeat TS Response Time Test Failures (Section 4OA2.2)
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action Program,” because Exelon did not adequately evaluate and correct a condition adverse to quality regarding repeat failures of a Technical Specification (TS) surveillance test (ST). Specifically, on July 13, 2010, Exelon generated issue report (IR) 1091132 to document that ST-2-041-909-2, the Unit 2 Main Seam Line (MSL) Flow – High Response Time Test, had failed its past two performances. In both instances, in October 2008 and July 2010, multiple response time values exceeded the TS requirements, and Exelon had to replace several relays to bring the values back into compliance. After the 2008 failure Exelon performed an apparent cause evaluation (ACE) and generated one corrective action (CA) and several action items (ACITs) to address the causes. Following the 2010 failure, Exelon did not evaluate the repeat failure or generate any additional actions. The inspectors determined that the CA and ACITs from 2008 did not thoroughly address the MSL Flow - High test failure, and the repeat test failure in 2010 was an opportunity for Exelon to re-evaluate the issue and pursue more appropriate and timely corrective actions. Exelon’s failure to evaluate and correct a condition adverse to quality regarding repeat failures of a TS surveillance test was determined to be a performance deficiency (PD).

The PD was determined to be more than minor because it was associated with the System, Structure, and Component & Barrier Performance attribute of the Reactor Safety - Barrier Integrity cornerstone. The PD adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance (Green) in accordance with Inspection Manual Chapter 0609, Attachment 4, “Phase 1 – Initial Screening and Characterization of Findings,” because it did not represent an actual open pathway in the physical integrity of reactor containment. The inspectors determined this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not thoroughly evaluate the repeat MSL response time test failures to ensure the underlying causes were identified and resolved. [P.1(c)] (Section 40A2.2)

Inspection Report# : 2011002 *(pdf)*

Emergency Preparedness

Significance: SL-IV Aug 19, 2011
Identified By: NRC
Item Type: NCV NonCited Violation

(Traditional Enforcement) Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval
The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 13, which indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.
The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance.
The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Inspection Report# : 2011503 *(pdf)*

Significance: G Aug 19, 2011
Identified By: NRC
Item Type: FIN Finding
Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval
The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 13, which indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.
The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance.
The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Inspection Report# : 2011503 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : January 04, 2012

Limerick 2
4Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Provide Adequate Restoration Instructions for Turbine Control Valve Online Maintenance
A Green, self-revealing finding was identified because Exelon did not provide adequate instructions for restoration of the Limerick Unit 2 number three turbine control valve (CV #3) following maintenance. During a fill and vent activity of the electro-hydraulic control (EHC) supply line for CV #3, a void in the system piping resulted in a low pressure condition at the next-in-series control valve, CV #1. The pressure drop actuated a relayed emergency trip system (RETS) pressure switch, generating a reactor protection system (RPS) 'B' side half scram signal. Combined with an 'A' side half scram signal that was previously inserted into RPS due to the CV #3 being maintained closed, an automatic reactor scram resulted.

The inspectors determined that Exelon's failure to provide adequate instructions for restoration of CV #3 from maintenance was a performance deficiency. The issue was more than minor because it was associated with the Procedure Quality attribute of the Initiating Events cornerstone, and it affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, on May 29, 2011, Limerick Unit 2 experienced an automatic reactor scram during restoration of turbine CV #3 from maintenance. The restoration instructions in the work order (WO) did not provide sufficient guidance to address the presence of a large air void in the EHC system that had the potential to cause EHC pressure fluctuations and resulted in a reactor scram. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609 Attachment 4, "Phase 1- Initial Screen and Characterization of Findings," because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding had a cross-cutting aspect in the area of Human Performance, Decision-Making, because Exelon did not use a systematic process to make a risk-significant decision when faced with uncertain or unexpected plant conditions. Specifically, Exelon did not recognize the potential risk of the CV #3 EHC fill and vent restoration activity, and they failed to conduct a thorough technical review of the restoration plan. [H.1.(a)] (Section 4OA3.3)

Inspection Report# : 2011004 *(pdf)*

Significance: G Jun 30, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Position Recirculation Isolation Valves in Accordance with Clearance
A Green, self-revealing NCV of Technical Specification (TS) 6.8.1, "Procedures and Programs," was identified for failure to position the Unit 2 recirculation loop isolation valves in accordance with the clearance instruction. As a result, the decay heat removal flow path, as provided by Unit 2 'A' residual heat removal (RHR), was in a degraded condition from April 6, 2011 until April 12, 2011, when the valve mispositioning was corrected. In addition, if the RHR system had been aligned to the Shutdown Cooling mode with the valves mispositioned in the open position, a large portion of the cooling flow would have bypassed the core, significantly impacting decay heat removal capability. Exelon entered the issue into the Corrective action Program (CAP) for resolution.

The inspectors determined that the failure to position the Unit 2 'A' loop recirculation pump suction and discharge valves to the closed positions in accordance with a clearance is a performance deficiency. This issue is more than minor because it was associated with the Configuration Control attribute of the Initiating Events cornerstone (i.e., shutdown equipment lineup), and it affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was determined to be of very low safety significance (Green) using IMC 0609, "Significance Determination Process",

Appendix G, “Shutdown Operations Significance Determination Process” because the finding did not require quantitative assessment (i.e., the finding did not degrade the ability to recover decay heat removal once lost). Exelon entered this issue into the CAP for resolution. Corrective actions included remediating the reactor operator who applied the main control room tag and revising the cross check program to require a concurrent verification check on clearance applications for valves being de-energized with main control room indicators.

The inspectors determined that this issue has a cross-cutting aspect in the area of Human Performance, Work Practices, because Exelon did not properly use human error prevention techniques (e.g., self and peer checking), commensurate with the risk of the assigned task. [H.4(a)] (Section 1R20)

Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Identify Adverse Trend regarding Out of Calibration Instrumentatio
A Green self-revealing finding was identified for Exelon’s failure to identify and correct an adverse trend regarding out of calibration temperature switches in the Unit 1 and Unit 2 stator cooling water (SCW) systems. Specifically, between 1990 and 2011 the SCW outlet temperature switches were checked by Exelon on a two year frequency and found to be out of calibration approximately 50 percent of the time. Since 2005, the switches were found out of calibration nearly 70 percent of the time, often by a significant amount. Each time the switches were found of out calibration, they were recalibrated within acceptable limits, but the adverse trend was not recognized. The inspectors determined that Exelon’s failure to identify and correct the adverse trend of out of calibration SCW outlet temperature switches was a performance deficiency which was reasonably within the licensee’s ability to foresee and prevent. Specifically, Exelon’s Performance Monitoring Program, described in ER-AA-2003, should have identified the trend during engineer’s annual review of cause and repair codes for completed work orders. Exelon entered the issue into the CAP for resolution.

The finding was more than minor because it was associated with the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, on February 25, 2011, the out of calibration SCW outlet temperature switches resulted in a SCW runback and manual scram of Limerick Unit 2 when they actuated 15 degrees lower than their intended set point. The finding was determined to be of very low safety significance (Green) in accordance with a Phase 1 of IMC 0609, “Significance Determination Process,” because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not identify the trend of out-of-calibration temperature switches in a timely manner. Exelon relied on the implementation of a thorough Performance Monitoring Program to supplement their CAP in the specific area of instrument performance monitoring and trending, and this program failed to detect the adverse trend in instrument performance. [P.1(b)]
Inspection Report# : 2011003 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for a Previous NRC Finding for Programmatic Deficiencies in the Preventive Maintenance Program
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for

failure to implement adequate corrective actions for a previous NRC identified finding. The previous finding involved a failure to perform adequate preventive maintenance (PM) on an emergency diesel generator (EDG) due to site engineers not being fully aware of new PM requirements developed by Exelon corporate. The lack of proper PM led to a failure of the diesel in May 2010. In response to the previous finding, Limerick performed an apparent cause evaluation (ACE) and developed actions to address the causes and extent of condition. However, the inspectors identified that the actions were not properly implemented, and, as a result, the deficiency identified by the inspectors was not fully resolved. Exelon entered the issue in the Corrective Action Program (CAP) for resolution.

The inspectors determined that the failure to implement adequate corrective actions for a previous NRC-identified finding was a performance deficiency. The issue is more than minor because, if left uncorrected, it could become a more significant safety concern. Specifically, the issues identified by the inspectors impacted Limerick's ability to establish and implement appropriate PM for equipment relied on for safe operation of the plant. Until the issues are fully resolved, Limerick continues to be vulnerable to gaps in their PM program. This issue potentially affects all sites in the Exelon fleet. The finding was determined to be of very low safety significance (Green) using Attachment 4 to IMC 0609, "Significance Determination Process," because the incomplete corrective actions did not result in an actual loss of safety function.

This finding has a cross-cutting aspect I the area of Problem Identification and Resolution, Corrective Action Program, because Exelon failed to implement appropriate corrective actions for a previous NRC identified finding in timely manner. [P.1(d)] (Section 1R19)

Inspection Report# : 2011005 *(pdf)*

Significance: W Dec 08, 2011
Identified By: NRC
Item Type: VIO Violation
Failure of Feedwater MOV Resulting in RCIC Inoperability for Longer than Allowed by Technical Specifications (Final Significance Determination)
A self-revealing White finding and violation of Technical Specification (TS) 3.7.3, "Reactor Core Isolation Cooling System and TS 3.6.3, "Primary Containment Isolation Valves," was identified. The inspectors determined that the failure by Exelon to ensure sufficient technical guidance was contained in operating procedures to: 1) ensure that a Main Feedwater system (FW) motor-operated valve (MOV) could close against expected system differential pressures and 2) prevent operators from attempting to close FW MOVs out of sequence resulting in differential pressures for which they are not designed; is a performance deficiency. This resulted in the Reactor Core Isolation Cooling system (RCIC) and a Primary Containment Isolation Valve (PCIV) being inoperable from April 23 to May 23, 2011, due to FW MOVs HV-041-209B and HV-041-210 failing to fully shut. As a result, both safety related systems were inoperable for greater than their Technical Specification allowed outage times. Specifically, operations procedures did not contain adequate technical guidance to ensure that operations personnel operated HV-041-209 A&B and HV-041-210 in the proper sequence to remain within valve design limitations. This resulted in the HV-041-209B and HV-041-210 valves failing to fully close on April 22, 2011, although they indicated closed in the Main Control Room. Upon identification, Limerick operations staff fully closed the valves restoring RCIC and PCIV operability, entered the issue into the CAP as issue report 1219476 and conducted a cause evaluation. Subsequent corrective actions included an extent-of-condition review, revisions to the operating procedure, and revisions to maintenance and testing procedures.

The inspectors determined that this finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, operating procedures, maintenance and testing were not adequately implemented to ensure that the design capability of HV-041-209B and HV-041-210 to close against expected system differential pressures was maintained. The finding was evaluated using NRC Inspection Manual Chapter 0609 Appendix A, "User Guidance for Significance Determination of Reactor Inspection Findings for At-Power Situations." Phase I, II, and III evaluations were conducted. The NRC total estimated ?CDF in this preliminary assessment is Low E-6/yr (WHITE) and the NRC total estimated Large Early Release Frequency (?LERF) in this preliminary assessment is 3.6E-9/yr (GREEN). The inspectors also determined that this issue has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure long term plant safety by maintaining design margins and minimizing

preventive maintenance deferrals [H.2. (a)]. Specifically, design limitations of the HV-041-209 A & B valves were not adequately captured in the procedural guidance, which contributed to the operators continuing on in the procedures for securing the FW long path recirculation line up when problems with the HV-041-210 valve were encountered. Additionally preventive maintenance activities which could potentially have prevented this issue were deferred without an appropriate evaluation. (Section 4OA2.2)

Inspection Report# : 2011009 *(pdf)*

Significance: G Nov 04, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Alternate AC Source Capability to Recover from Station Blackout
The team identified a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current (AC) Power," because Exelon did not demonstrate that the alternate AC (AAC) source could provide acceptable capability to withstand a station blackout (SBO) within the analyzed coping timeline. Specifically, Exelon's evaluation of the Limerick Generating Station's excess emergency diesel generator (EDG) capacity did not analyze the effects of the loss of an operating emergency service water (ESW) pump following a single failure on the non-blacked out unit. The loss of the ESW pump would result in loss of cooling to one of the three credited EDGs and a subsequent high temperature trip of the EDG. The team determined the time delay to reset this trip had not been evaluated and that Exelon had not performed the timed test required by 10 CFR 50.63 to show that actions required to provide power to the blacked-out unit from the AAC could be performed within the analysis requirements. As a result, the team concluded that Exelon did not demonstrate that the AAC source would have the required availability and capability within the analyzed timeline. Exelon entered the issue into their corrective action program for evaluation and resolution.

This issue was more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design or qualification deficiency confirmed not to result in a loss of functionality. The finding had a cross-cutting aspect in the area in the area of Problem Identification and Resolution, Corrective Action Program Component, because Exelon did not thoroughly evaluate problems such that resolutions address causes and extent of conditions and did not conduct effectiveness reviews to ensure problems are resolved. Specifically, Exelon's recent safety evaluation did not evaluate problems associated with a loss of an EDG due to a high temperature condition and the impact on the SBO AAC power source availability. (IMC 0310, Aspect P.1(c)) (1R17.1b)

Inspection Report# : 2011007 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Address Repeat TS Response Time Test Failures (Section 4OA2.2)
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action Program," because Exelon did not adequately evaluate and correct a condition adverse to quality regarding repeat failures of a Technical Specification (TS) surveillance test (ST). Specifically, on July 13, 2010, Exelon generated issue report (IR) 1091132 to document that ST-2-041-909-2, the Unit 2 Main Seam Line (MSL) Flow – High Response Time Test, had failed its past two performances. In both instances, in October 2008 and July 2010, multiple response time values exceeded the TS requirements, and Exelon had to replace several relays to bring the values back into compliance. After the 2008 failure Exelon performed an apparent cause evaluation (ACE) and generated one corrective action (CA) and several action items (ACITs) to address the causes. Following the 2010 failure, Exelon did not evaluate the repeat failure or generate any additional actions. The inspectors determined that the CA and ACITs from 2008 did not

thoroughly address the MSL Flow - High test failure, and the repeat test failure in 2010 was an opportunity for Exelon to re-evaluate the issue and pursue more appropriate and timely corrective actions. Exelon's failure to evaluate and correct a condition adverse to quality regarding repeat failures of a TS surveillance test was determined to be a performance deficiency (PD).

The PD was determined to be more than minor because it was associated with the System, Structure, and Component & Barrier Performance attribute of the Reactor Safety - Barrier Integrity cornerstone. The PD adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance (Green) in accordance with Inspection Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," because it did not represent an actual open pathway in the physical integrity of reactor containment. The inspectors determined this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not thoroughly evaluate the repeat MSL response time test failures to ensure the underlying causes were identified and resolved. [P.1(c)] (Section 40A2.2)

Inspection Report# : 2011002 *(pdf)*

Emergency Preparedness

Significance: SL-IV Aug 19, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
(Traditional Enforcement) Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval
The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 13, which indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.
The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance.
The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Inspection Report# : 2011503 *(pdf)*

Significance: G Aug 19, 2011
Identified By: NRC
Item Type: FIN Finding
Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval
The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 13, which indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a

fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.
The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance.
The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding.
Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Inspection Report# : 2011503 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : March 02, 2012

Limerick 2
1Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Provide Adequate Restoration Instructions for Turbine Control Valve Online Maintenance
A Green, self-revealing finding was identified because Exelon did not provide adequate instructions for restoration of the Limerick Unit 2 number three turbine control valve (CV #3) following maintenance. During a fill and vent activity of the electro-hydraulic control (EHC) supply line for CV #3, a void in the system piping resulted in a low pressure condition at the next-in-series control valve, CV #1. The pressure drop actuated a relayed emergency trip system (RETS) pressure switch, generating a reactor protection system (RPS) 'B' side half scram signal. Combined with an 'A' side half scram signal that was previously inserted into RPS due to the CV #3 being maintained closed, an automatic reactor scram resulted.

The inspectors determined that Exelon's failure to provide adequate instructions for restoration of CV #3 from maintenance was a performance deficiency. The issue was more than minor because it was associated with the Procedure Quality attribute of the Initiating Events cornerstone, and it affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, on May 29, 2011, Limerick Unit 2 experienced an automatic reactor scram during restoration of turbine CV #3 from maintenance. The restoration instructions in the work order (WO) did not provide sufficient guidance to address the presence of a large air void in the EHC system that had the potential to cause EHC pressure fluctuations and resulted in a reactor scram. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609 Attachment 4, "Phase 1- Initial Screen and Characterization of Findings," because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding had a cross-cutting aspect in the area of Human Performance, Decision-Making, because Exelon did not use a systematic process to make a risk-significant decision when faced with uncertain or unexpected plant conditions. Specifically, Exelon did not recognize the potential risk of the CV #3 EHC fill and vent restoration activity, and they failed to conduct a thorough technical review of the restoration plan. [H.1.(a)] (Section 4OA3.3)

Inspection Report# : 2011004 *(pdf)*

Significance: G Jun 30, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Position Recirculation Isolation Valves in Accordance with Clearance
A Green, self-revealing NCV of Technical Specification (TS) 6.8.1, "Procedures and Programs," was identified for failure to position the Unit 2 recirculation loop isolation valves in accordance with the clearance instruction. As a result, the decay heat removal flow path, as provided by Unit 2 'A' residual heat removal (RHR), was in a degraded condition from April 6, 2011 until April 12, 2011, when the valve mispositioning was corrected. In addition, if the RHR system had been aligned to the Shutdown Cooling mode with the valves mispositioned in the open position, a large portion of the cooling flow would have bypassed the core, significantly impacting decay heat removal capability. Exelon entered the issue into the Corrective action Program (CAP) for resolution.

The inspectors determined that the failure to position the Unit 2 'A' loop recirculation pump suction and discharge valves to the closed positions in accordance with a clearance is a performance deficiency. This issue is more than minor because it was associated with the Configuration Control attribute of the Initiating Events cornerstone (i.e., shutdown equipment lineup), and it affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was determined to be of very low safety significance (Green) using IMC 0609, "Significance Determination Process",

Appendix G, “Shutdown Operations Significance Determination Process” because the finding did not require quantitative assessment (i.e., the finding did not degrade the ability to recover decay heat removal once lost). Exelon entered this issue into the CAP for resolution. Corrective actions included remediating the reactor operator who applied the main control room tag and revising the cross check program to require a concurrent verification check on clearance applications for valves being de-energized with main control room indicators.

The inspectors determined that this issue has a cross-cutting aspect in the area of Human Performance, Work Practices, because Exelon did not properly use human error prevention techniques (e.g., self and peer checking), commensurate with the risk of the assigned task. [H.4(a)] (Section 1R20)

Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Identify Adverse Trend regarding Out of Calibration Instrumentatio
A Green self-revealing finding was identified for Exelon’s failure to identify and correct an adverse trend regarding out of calibration temperature switches in the Unit 1 and Unit 2 stator cooling water (SCW) systems. Specifically, between 1990 and 2011 the SCW outlet temperature switches were checked by Exelon on a two year frequency and found to be out of calibration approximately 50 percent of the time. Since 2005, the switches were found out of calibration nearly 70 percent of the time, often by a significant amount. Each time the switches were found of out calibration, they were recalibrated within acceptable limits, but the adverse trend was not recognized. The inspectors determined that Exelon’s failure to identify and correct the adverse trend of out of calibration SCW outlet temperature switches was a performance deficiency which was reasonably within the licensee’s ability to foresee and prevent. Specifically, Exelon’s Performance Monitoring Program, described in ER-AA-2003, should have identified the trend during engineer’s annual review of cause and repair codes for completed work orders. Exelon entered the issue into the CAP for resolution.

The finding was more than minor because it was associated with the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, on February 25, 2011, the out of calibration SCW outlet temperature switches resulted in a SCW runback and manual scram of Limerick Unit 2 when they actuated 15 degrees lower than their intended set point. The finding was determined to be of very low safety significance (Green) in accordance with a Phase 1 of IMC 0609, “Significance Determination Process,” because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not identify the trend of out-of-calibration temperature switches in a timely manner. Exelon relied on the implementation of a thorough Performance Monitoring Program to supplement their CAP in the specific area of instrument performance monitoring and trending, and this program failed to detect the adverse trend in instrument performance. [P.1(b)]
Inspection Report# : 2011003 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for a Previous NRC Finding for Programmatic Deficiencies in the Preventive Maintenance Program
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for

failure to implement adequate corrective actions for a previous NRC identified finding. The previous finding involved a failure to perform adequate preventive maintenance (PM) on an emergency diesel generator (EDG) due to site engineers not being fully aware of new PM requirements developed by Exelon corporate. The lack of proper PM led to a failure of the diesel in May 2010. In response to the previous finding, Limerick performed an apparent cause evaluation (ACE) and developed actions to address the causes and extent of condition. However, the inspectors identified that the actions were not properly implemented, and, as a result, the deficiency identified by the inspectors was not fully resolved. Exelon entered the issue in the Corrective Action Program (CAP) for resolution.

The inspectors determined that the failure to implement adequate corrective actions for a previous NRC-identified finding was a performance deficiency. The issue is more than minor because, if left uncorrected, it could become a more significant safety concern. Specifically, the issues identified by the inspectors impacted Limerick's ability to establish and implement appropriate PM for equipment relied on for safe operation of the plant. Until the issues are fully resolved, Limerick continues to be vulnerable to gaps in their PM program. This issue potentially affects all sites in the Exelon fleet. The finding was determined to be of very low safety significance (Green) using Attachment 4 to IMC 0609, "Significance Determination Process," because the incomplete corrective actions did not result in an actual loss of safety function.

This finding has a cross-cutting aspect I the area of Problem Identification and Resolution, Corrective Action Program, because Exelon failed to implement appropriate corrective actions for a previous NRC identified finding in timely manner. [P.1(d)] (Section 1R19)

Inspection Report# : 2011005 *(pdf)*

Significance: W Dec 08, 2011
Identified By: NRC
Item Type: VIO Violation
Failure of Feedwater MOV Resulting in RCIC Inoperability for Longer than Allowed by Technical Specifications (Final Significance Determination)
A self-revealing White finding and violation of Technical Specification (TS) 3.7.3, "Reactor Core Isolation Cooling System and TS 3.6.3, "Primary Containment Isolation Valves," was identified. The inspectors determined that the failure by Exelon to ensure sufficient technical guidance was contained in operating procedures to: 1) ensure that a Main Feedwater system (FW) motor-operated valve (MOV) could close against expected system differential pressures and 2) prevent operators from attempting to close FW MOVs out of sequence resulting in differential pressures for which they are not designed; is a performance deficiency. This resulted in the Reactor Core Isolation Cooling system (RCIC) and a Primary Containment Isolation Valve (PCIV) being inoperable from April 23 to May 23, 2011, due to FW MOVs HV-041-209B and HV-041-210 failing to fully shut. As a result, both safety related systems were inoperable for greater than their Technical Specification allowed outage times. Specifically, operations procedures did not contain adequate technical guidance to ensure that operations personnel operated HV-041-209 A&B and HV-041-210 in the proper sequence to remain within valve design limitations. This resulted in the HV-041-209B and HV-041-210 valves failing to fully close on April 22, 2011, although they indicated closed in the Main Control Room. Upon identification, Limerick operations staff fully closed the valves restoring RCIC and PCIV operability, entered the issue into the CAP as issue report 1219476 and conducted a cause evaluation. Subsequent corrective actions included an extent-of-condition review, revisions to the operating procedure, and revisions to maintenance and testing procedures.

The inspectors determined that this finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, operating procedures, maintenance and testing were not adequately implemented to ensure that the design capability of HV-041-209B and HV-041-210 to close against expected system differential pressures was maintained. The finding was evaluated using NRC Inspection Manual Chapter 0609 Appendix A, "User Guidance for Significance Determination of Reactor Inspection Findings for At-Power Situations." Phase I, II, and III evaluations were conducted. The NRC total estimated ?CDF in this preliminary assessment is Low E-6/yr (WHITE) and the NRC total estimated Large Early Release Frequency (?LERF) in this preliminary assessment is 3.6E-9/yr (GREEN). The inspectors also determined that this issue has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure long term plant safety by maintaining design margins and minimizing

preventive maintenance deferrals [H.2. (a)]. Specifically, design limitations of the HV-041-209 A & B valves were not adequately captured in the procedural guidance, which contributed to the operators continuing on in the procedures for securing the FW long path recirculation line up when problems with the HV-041-210 valve were encountered. Additionally preventive maintenance activities which could potentially have prevented this issue were deferred without an appropriate evaluation. (Section 4OA2.2)

Inspection Report# : 2011009 *(pdf)*

Significance: G Nov 04, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Alternate AC Source Capability to Recover from Station Blackout
The team identified a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current (AC) Power," because Exelon did not demonstrate that the alternate AC (AAC) source could provide acceptable capability to withstand a station blackout (SBO) within the analyzed coping timeline. Specifically, Exelon's evaluation of the Limerick Generating Station's excess emergency diesel generator (EDG) capacity did not analyze the effects of the loss of an operating emergency service water (ESW) pump following a single failure on the non-blacked out unit. The loss of the ESW pump would result in loss of cooling to one of the three credited EDGs and a subsequent high temperature trip of the EDG. The team determined the time delay to reset this trip had not been evaluated and that Exelon had not performed the timed test required by 10 CFR 50.63 to show that actions required to provide power to the blacked-out unit from the AAC could be performed within the analysis requirements. As a result, the team concluded that Exelon did not demonstrate that the AAC source would have the required availability and capability within the analyzed timeline. Exelon entered the issue into their corrective action program for evaluation and resolution.

This issue was more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design or qualification deficiency confirmed not to result in a loss of functionality. The finding had a cross-cutting aspect in the area in the area of Problem Identification and Resolution, Corrective Action Program Component, because Exelon did not thoroughly evaluate problems such that resolutions address causes and extent of conditions and did not conduct effectiveness reviews to ensure problems are resolved. Specifically, Exelon's recent safety evaluation did not evaluate problems associated with a loss of an EDG due to a high temperature condition and the impact on the SBO AAC power source availability. (IMC 0310, Aspect P.1(c)) (1R17.1b)

Inspection Report# : 2011007 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: SL-IV Aug 19, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
(Traditional Enforcement) Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval
The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 13, which indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a

fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.
The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance.
The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding.
Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Inspection Report# : 2011503 *(pdf)*

Significance: G Aug 19, 2011
Identified By: NRC
Item Type: FIN Finding
Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval
The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 13, which indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.
The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance.
The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding.
Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Inspection Report# : 2011503 *(pdf)*

Occupational Radiation Safety

Significance: N/A Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Make a 10CFR 50.72(b)(2)(xi) Notification
The inspectors identified a Severity Level (SL) IV NCV of 10 Code of Federal Regulations (CFR) 50.72(b)(2)(xi) because the NRC Operations Center was not notified via the Emergency Notification System (ENS) within four hours of a reportable event related to the health and safety of the public and protection of the environment for which notification to

other government agencies was made. Exelon did make a courtesy notification to the NRC resident inspection staff. However, Exelon did not formally report, to the NRC Operations Center, the notification of other government agencies regarding an abnormal radioactive liquid release, from the Limerick Generating Station common cooling tower blow down line on March 19, 2012. Inspectors performed system walkdowns and conducted an event follow-up inspection on March 20, 2012 to assess the impacts of the overflow event.
This deficiency was evaluated using the traditional enforcement process since the failure to make a required report could adversely impact the NRC's ability to carry out its regulatory mission. The deficiency was evaluated using the criteria contained in Section 6.9(d)(9) of the NRC's Enforcement Policy and determined to meet the criteria for disposition as a SL IV NCV. Exelon took immediate corrective actions pertaining to the abnormal release, including suspension of effluent releases via the cooling tower blow down line and initiation of actions to evaluate the cause and preclude recurrence, as well as the conduct of public dose calculations. Additionally, upon identification by the NRC that the issue was reportable, Exelon subsequently reported the event to the NRC Operations Center on April 11, 2012. Exelon also entered this issue into its corrective action program (IR 1347829).
This violation involved a failure to make a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using the traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Section 6.9, "lnaccurate and Incomplete Information or Failure to Make a Required Report," example (d)(9), which states, "A licensee fails to make a report required by 10 CFR 50.72 or 10 CFR 50.73," the NRC determined that this violation is more than minor and categorized as a SL lV violation. Because this violation involves the traditional enforcement process with no underlying technical violation that would be considered more than minor in accordance with IMC 0612, a cross-cutting aspect is not assigned to this violation.
(Section 4OA3)
Inspection Report# : 2012002 *(pdf)*

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : May 29, 2012

Limerick 2
2Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Provide Adequate Restoration Instructions for Turbine Control Valve Online Maintenance
A Green, self-revealing finding was identified because Exelon did not provide adequate instructions for restoration of the Limerick Unit 2 number three turbine control valve (CV #3) following maintenance. During a fill and vent activity of the electro-hydraulic control (EHC) supply line for CV #3, a void in the system piping resulted in a low pressure condition at the next-in-series control valve, CV #1. The pressure drop actuated a relayed emergency trip system (RETS) pressure switch, generating a reactor protection system (RPS) 'B' side half scram signal. Combined with an 'A' side half scram signal that was previously inserted into RPS due to the CV #3 being maintained closed, an automatic reactor scram resulted.

The inspectors determined that Exelon's failure to provide adequate instructions for restoration of CV #3 from maintenance was a performance deficiency. The issue was more than minor because it was associated with the Procedure Quality attribute of the Initiating Events cornerstone, and it affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, on May 29, 2011, Limerick Unit 2 experienced an automatic reactor scram during restoration of turbine CV #3 from maintenance. The restoration instructions in the work order (WO) did not provide sufficient guidance to address the presence of a large air void in the EHC system that had the potential to cause EHC pressure fluctuations and resulted in a reactor scram. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609 Attachment 4, "Phase 1- Initial Screen and Characterization of Findings," because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding had a cross-cutting aspect in the area of Human Performance, Decision-Making, because Exelon did not use a systematic process to make a risk-significant decision when faced with uncertain or unexpected plant conditions. Specifically, Exelon did not recognize the potential risk of the CV #3 EHC fill and vent restoration activity, and they failed to conduct a thorough technical review of the restoration plan. [H.1.(a)] (Section 4OA3.3)

Inspection Report# : 2011004 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Conduct Timely Corrective Actions to Replace Age Degraded Relays
The inspectors identified a Green NCV of 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon failed to conduct timely corrective actions to preclude repetition of a condition adverse to quality involving the replacement of age degraded direct current motor operated valve (DC MOV) relays. Specifically, Exelon experienced multiple failures of ARD type relays that were known to be susceptible to age-related degradation once past their vendor recommended lifetime. Exelon's equipment apparent cause evaluations (EACEs) for the most recent ARD relay failures failed to prioritize the replacement of these relays which led the preventative maintenance (PM) for the relay replacement to be scheduled as much as 8 years past their vendor recommended lifetime and contributed to the March 2012 relay failure. In addition to the untimely corrective actions,

the licensee's extent of condition performed as part of the 2010 EACE was too narrowly focused, contributing to their failure to recognize and address all the relays that were susceptible to age-related failures. Exelon identified the narrowly focused EOC as part of their 2012 EACE and has entered both issues in their corrective action program (CAP) for resolution (AR 1380603, AR 1380605 and ACIT 1341695-14).

The inspectors determined that the failure to implement timely corrective actions was a performance deficiency. The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was determined to be of very low safety significance (Green) using Attachment 4 to IMC 0609, "Significance Determination Process," because the incomplete corrective actions did not result in an actual loss of safety function. The finding has a cross cutting aspect in the corrective action component of the problem identification and resolution area because the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary, including properly classifying, prioritizing, and evaluating for operability and reportability conditions adverse to quality. [P.1(c)] (Section 1R13)

Inspection Report# : 2012003 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for a Previous NRC Finding for Programmatic Deficiencies in the Preventive Maintenance Program
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failure to implement adequate corrective actions for a previous NRC identified finding. The previous finding involved a failure to perform adequate preventive maintenance (PM) on an emergency diesel generator (EDG) due to site engineers not being fully aware of new PM requirements developed by Exelon corporate. The lack of proper PM led to a failure of the diesel in May 2010. In response to the previous finding, Limerick performed an apparent cause evaluation (ACE) and developed actions to address the causes and extent of condition. However, the inspectors identified that the actions were not properly implemented, and, as a result, the deficiency identified by the inspectors was not fully resolved. Exelon entered the issue in the Corrective Action Program (CAP) for resolution.

The inspectors determined that the failure to implement adequate corrective actions for a previous NRC-identified finding was a performance deficiency. The issue is more than minor because, if left uncorrected, it could become a more significant safety concern. Specifically, the issues identified by the inspectors impacted Limerick's ability to establish and implement appropriate PM for equipment relied on for safe operation of the plant. Until the issues are fully resolved, Limerick continues to be vulnerable to gaps in their PM program. This issue potentially affects all sites in the Exelon fleet. The finding was determined to be of very low safety significance (Green) using Attachment 4 to IMC 0609, "Significance Determination Process," because the incomplete corrective actions did not result in an actual loss of safety function.

This finding has a cross-cutting aspect I the area of Problem Identification and Resolution, Corrective Action Program, because Exelon failed to implement appropriate corrective actions for a previous NRC identified finding in timely manner. [P.1(d)] (Section 1R19)

Inspection Report# : 2011005 *(pdf)*

Significance: W Dec 08, 2011
Identified By: NRC
Item Type: VIO Violation
Failure of Feedwater MOV Resulting in RCIC Inoperability for Longer than Allowed by Technical Specifications (Final Significance Determination)
A self-revealing White finding and violation of Technical Specification (TS) 3.7.3, "Reactor Core Isolation Cooling System and TS 3.6.3, "Primary Containment Isolation Valves," was identified. The inspectors determined that the

failure by Exelon to ensure sufficient technical guidance was contained in operating procedures to: 1) ensure that a Main Feedwater system (FW) motor-operated valve (MOV) could close against expected system differential pressures and 2) prevent operators from attempting to close FW MOVs out of sequence resulting in differential pressures for which they are not designed; is a performance deficiency. This resulted in the Reactor Core Isolation Cooling system (RCIC) and a Primary Containment Isolation Valve (PCIV) being inoperable from April 23 to May 23, 2011, due to FW MOVs HV-041-209B and HV-041-210 failing to fully shut. As a result, both safety related systems were inoperable for greater than their Technical Specification allowed outage times. Specifically, operations procedures did not contain adequate technical guidance to ensure that operations personnel operated HV-041-209 A&B and HV-041-210 in the proper sequence to remain within valve design limitations. This resulted in the HV-041-209B and HV-041-210 valves failing to fully close on April 22, 2011, although they indicated closed in the Main Control Room. Upon identification, Limerick operations staff fully closed the valves restoring RCIC and PCIV operability, entered the issue into the CAP as issue report 1219476 and conducted a cause evaluation. Subsequent corrective actions included an extent-of-condition review, revisions to the operating procedure, and revisions to maintenance and testing procedures.

The inspectors determined that this finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, operating procedures, maintenance and testing were not adequately implemented to ensure that the design capability of HV-041-209B and HV-041-210 to close against expected system differential pressures was maintained. The finding was evaluated using NRC Inspection Manual Chapter 0609 Appendix A, “User Guidance for Significance Determination of Reactor Inspection Findings for At-Power Situations.” Phase I, II, and III evaluations were conducted. The NRC total estimated ?CDF in this preliminary assessment is Low E-6/yr (WHITE) and the NRC total estimated Large Early Release Frequency (?LERF) in this preliminary assessment is 3.6E-9/yr (GREEN). The inspectors also determined that this issue has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure long term plant safety by maintaining design margins and minimizing preventive maintenance deferrals [H.2. (a)]. Specifically, design limitations of the HV-041-209 A & B valves were not adequately captured in the procedural guidance, which contributed to the operators continuing on in the procedures for securing the FW long path recirculation line up when problems with the HV-041-210 valve were encountered. Additionally preventive maintenance activities which could potentially have prevented this issue were deferred without an appropriate evaluation. (Section 4OA2.2)

Inspection Report# : 2011009 *(pdf)*

Significance: G Nov 04, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Alternate AC Source Capability to Recover from Station Blackout
The team identified a non-cited violation of 10 CFR 50.63, “Loss of All Alternating Current (AC) Power,” because Exelon did not demonstrate that the alternate AC (AAC) source could provide acceptable capability to withstand a station blackout (SBO) within the analyzed coping timeline. Specifically, Exelon’s evaluation of the Limerick Generating Station’s excess emergency diesel generator (EDG) capacity did not analyze the effects of the loss of an operating emergency service water (ESW) pump following a single failure on the non-blacked out unit. The loss of the ESW pump would result in loss of cooling to one of the three credited EDGs and a subsequent high temperature trip of the EDG. The team determined the time delay to reset this trip had not been evaluated and that Exelon had not performed the timed test required by 10 CFR 50.63 to show that actions required to provide power to the blacked-out unit from the AAC could be performed within the analysis requirements. As a result, the team concluded that Exelon did not demonstrate that the AAC source would have the required availability and capability within the analyzed timeline. Exelon entered the issue into their corrective action program for evaluation and resolution.

This issue was more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design or qualification deficiency confirmed not to result in a loss of functionality. The finding had a cross-cutting aspect in the area in the area of Problem Identification and Resolution,

Corrective Action Program Component, because Exelon did not thoroughly evaluate problems such that resolutions address causes and extent of conditions and did not conduct effectiveness reviews to ensure problems are resolved. Specifically, Exelon's recent safety evaluation did not evaluate problems associated with a loss of an EDG due to a high temperature condition and the impact on the SBO AAC power source availability. (IMC 0310, Aspect P.1(c)) (1R17.1b)

Inspection Report# : 2011007 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Aug 19, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
(Traditional Enforcement) Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval
The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 13, which indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.
The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance.
The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).
Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding.

Inspection Report# : 2011503 *(pdf)*

Significance: G Aug 19, 2011
Identified By: NRC
Item Type: FIN Finding
Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval
The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 13, which

indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.
The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance.
The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding.
Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).
Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding.

Inspection Report# : 2011503 *(pdf)*

Occupational Radiation Safety

Significance: N/A Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Make a 10CFR 50.72(b)(2)(xi) Notification
The inspectors identified a Severity Level (SL) IV NCV of 10 Code of Federal Regulations (CFR) 50.72(b)(2)(xi) because the NRC Operations Center was not notified via the Emergency Notification System (ENS) within four hours of a reportable event related to the health and safety of the public and protection of the environment for which notification to other government agencies was made. Exelon did make a courtesy notification to the NRC resident inspection staff. However, Exelon did not formally report, to the NRC Operations Center, the notification of other government agencies regarding an abnormal radioactive liquid release, from the Limerick Generating Station common cooling tower blow down line on March 19, 2012. Inspectors performed system walkdowns and conducted an event follow-up inspection on March 20, 2012 to assess the impacts of the overflow event.
This deficiency was evaluated using the traditional enforcement process since the failure to make a required report could adversely impact the NRC's ability to carry out its regulatory mission. The deficiency was evaluated using the criteria contained in Section 6.9(d)(9) of the NRC's Enforcement Policy and determined to meet the criteria for disposition as a SL IV NCV.
Exelon took immediate corrective actions pertaining to the abnormal release, including suspension of effluent releases via the cooling tower blow down line and initiation of actions to evaluate the cause and preclude recurrence, as well as the conduct of public dose calculations. Additionally, upon identification by the NRC that the issue was reportable, Exelon subsequently reported the event to the NRC Operations Center on April 11, 2012. Exelon also entered this issue into its corrective action program (IR 1347829).
This violation involved a failure to make a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using the traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Section 6.9, "lnaccurate and Incomplete Information or Failure to Make a Required Report," example (d)(9), which states, "A licensee fails to make a report required by 10 CFR 50.72 or 10 CFR 50.73," the NRC determined that this violation is more than minor and categorized as a SL lV violation. Because this violation involves the traditional enforcement

process with no underlying technical violation that would be considered more than minor in accordance with IMC 0612, a cross-cutting aspect is not assigned to this violation.
(Section 4OA3)
Inspection Report# : 2012002 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Jun 15, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to submit an LER revision for conditions Prohibited by TS associated with the HPCI and RCIC Systems
SL-IV: The inspectors identified a Severity Level (SL) IV non-cited violation (NCV) of 10 CFR Part 50.73, "Licensee Event Report [LER] System," because violations of Technical Specifications (TS) 3.5.1 and 3.0.3 for the condition of the high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) systems being simultaneously inoperable were not reported to the NRC within 60 days of discovery. After this was identified by the inspectors, the issue was entered into Exelon's CAP as IR 1377559.

The inspectors determined that the failure to revise LER 05000353/2011-003-00 within 60 days of initial issuance on July 21, 2011 to include the violations of TS 3.5.1 and 3.0.3 in accordance with 10 CFR Part 50.73 was a performance deficiency that was reasonably within Exelon's ability to foresee and correct, and should have been prevented. Because the issue impacted the regulatory process, in that a violation of Technical Specifications was not reported to the NRC within the required timeframe, and delayed the NRC's opportunity to review the matter in its completion, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.9.d.9 from the NRC Enforcement Policy, the inspectors determined the performance deficiency was a SL IV violation, because Exelon personnel did not make a report required by 10 CFR Part 50.73. In accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, traditional enforcement issues are not assigned cross-cutting aspects. The significance of the associated performance deficiency was screened against the ROP per the guidance of IMC 0612, Appendix B, and the inspectors determined it to be minor because it was not similar to Appendix E examples, was not a precursor to a significant event, did not cause a PI to exceed a threshold, did not adversely affect cornerstone objectives, and if left uncorrected would not have lead to a more significant safety concern. As such, no ROP finding was identified and no cross-cutting aspect was assigned. (Section 4OA4)
Inspection Report# : 2012008 *(pdf)*

Last modified : September 12, 2012

Limerick 2
3Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish and Perform Adequate Preventive Maintenance on 480VAC Load Center Power Transformers
A self-revealing NCV of Limerick Technical Specification (TS) 6.8, "Procedures and Programs," was identified for failure to establish and perform adequate preventive maintenance (PM) activities to routinely inspect the 480 volt-alternating current (VAC) load center power transformers. As a result, Limerick experienced a transformer related fault that could have been prevented by PM which resulted in a manual reactor scram of Unit 1 on July 18, 2012. Corrective actions implemented by Limerick as a result of this transformer failure included advancing the thermography window installation schedule to align with each transformers feeder breaker trip test calibration. Limerick also performed thermography inspections on the other load center transformers and developed corrective actions (Issue Report (IR) 1355930 and 1390033) to reinstitute the clean and inspect PM on all load center transformers at an increased frequency of 8 years vice 20 years.
The finding was determined to be more than minor because it was associated with the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was determined to be of very low safety significance because the finding caused a reactor trip but not the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding was determined to have a cross-cutting aspect because, although the performance deficiency occurred more than three years ago, the performance characteristic associated with ineffective PM implementation continues to exist within Limerick's PM program and is indicative of present performance. The cross-cutting aspect associated with this performance deficiency is in the Resources component of the Human Performance area because the licensee did not ensure that personnel, equipment, procedures and other resources were adequate to assure long term plant safety through maintenance and the minimization of long-standing equipment issues [H.2 (a)]. (Section 4OA3.7)
Inspection Report# : 2012004 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation

Inadequate Post Maintenance Testing Following Circuit Breaker Replacement
A self-revealing NCV of TS 6.8, "Procedures and Programs," was identified because Exelon did not maintain adequate maintenance procedures associated with work performed on the Unit 2 'B' residual heat removal (RHR) pump motor circuit breaker. Specifically, Exelon did not perform appropriate post maintenance testing following the replacement of the Unit 2 'B' RHR pump breaker on November 30, 2011. Despite the circuit breaker replacement affecting necessary pump support equipment operation due to circuit breaker dimensional differences, the procedure did not require a check to assure the support equipment was not adversely affected following the installation. As a result, the Unit 2 'B' RHR pump was inoperable for the low pressure coolant injection function when the pump was operating in the suppression pool cooling mode because the pump's minimum flow valve would not have opened automatically following the receipt of a loss of coolant accident signal. This condition existed from November 30, 2011 until the condition was corrected on June 27, 2012. This issue was entered into the Exelon CAP as IR 1381792. This self-revealing finding was determined to be more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because it did not represent a loss of system function and did not represent an actual loss of function for two separate safety systems out-of-service for greater than its TS Allowed Outage Time. The finding had a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not provide work packages with sufficient detailed instructions to assure nuclear safety [H.2(c)]. (Section 4OA2.2)
Inspection Report# : 2012004 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Conduct Timely Corrective Actions to Replace Age Degraded Relays
The inspectors identified a Green NCV of 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon failed to conduct timely corrective actions to preclude repetition of a condition adverse to quality involving the replacement of age degraded direct current motor operated valve (DC MOV) relays. Specifically, Exelon experienced multiple failures of ARD type relays that were known to be susceptible to age-related degradation once past their vendor recommended lifetime. Exelon's equipment apparent cause evaluations (EACEs) for the most recent ARD relay failures failed to prioritize the replacement of these relays which led the preventative maintenance (PM) for the relay replacement to be scheduled as much as 8 years past their vendor recommended lifetime and contributed to the March 2012 relay failure. In addition to the untimely corrective actions, the licensee's extent of condition performed as part of the 2010 EACE was too narrowly focused, contributing to their failure to recognize and address all the relays that were susceptible to age-related failures. Exelon identified the narrowly focused EOC as part of their 2012 EACE and has entered both issues in their corrective action program (CAP) for resolution (AR 1380603, AR 1380605 and ACIT 1341695-14).

The inspectors determined that the failure to implement timely corrective actions was a performance deficiency. The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was determined to be of very low safety significance (Green) using Attachment 4 to IMC 0609, "Significance Determination Process," because the incomplete corrective actions did not result in an actual loss of safety function. The finding has a cross cutting aspect in the corrective action component of the problem identification and resolution

area because the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary, including properly classifying, prioritizing, and evaluating for operability and reportability conditions adverse to quality. [P.1(c)] (Section 1R13)

Inspection Report# : 2012003 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for a Previous NRC Finding for Programmatic Deficiencies in the Preventive Maintenance Program
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failure to implement adequate corrective actions for a previous NRC identified finding. The previous finding involved a failure to perform adequate preventive maintenance (PM) on an emergency diesel generator (EDG) due to site engineers not being fully aware of new PM requirements developed by Exelon corporate. The lack of proper PM led to a failure of the diesel in May 2010. In response to the previous finding, Limerick performed an apparent cause evaluation (ACE) and developed actions to address the causes and extent of condition. However, the inspectors identified that the actions were not properly implemented, and, as a result, the deficiency identified by the inspectors was not fully resolved. Exelon entered the issue in the Corrective Action Program (CAP) for resolution.

The inspectors determined that the failure to implement adequate corrective actions for a previous NRC-identified finding was a performance deficiency. The issue is more than minor because, if left uncorrected, it could become a more significant safety concern. Specifically, the issues identified by the inspectors impacted Limerick's ability to establish and implement appropriate PM for equipment relied on for safe operation of the plant. Until the issues are fully resolved, Limerick continues to be vulnerable to gaps in their PM program. This issue potentially affects all sites in the Exelon fleet. The finding was determined to be of very low safety significance (Green) using Attachment 4 to IMC 0609, "Significance Determination Process," because the incomplete corrective actions did not result in an actual loss of safety function.

This finding has a cross-cutting aspect I the area of Problem Identification and Resolution, Corrective Action Program, because Exelon failed to implement appropriate corrective actions for a previous NRC identified finding in timely manner. [P.1(d)] (Section 1R19)

Inspection Report# : 2011005 *(pdf)*

Significance: G Nov 04, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Alternate AC Source Capability to Recover from Station Blackout
The team identified a non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current (AC) Power," because Exelon did not demonstrate that the alternate AC (AAC) source could provide acceptable capability to withstand a station blackout (SBO) within the analyzed coping timeline. Specifically, Exelon's evaluation of the Limerick Generating Station's excess emergency diesel generator (EDG) capacity did not analyze the effects of the loss of an operating emergency service water (ESW) pump following a single failure on the non-blacked out unit. The loss of the ESW pump would result in loss of cooling to one of the three credited EDGs and a subsequent high temperature trip of the EDG. The team determined the time delay to reset this trip had not been evaluated and that Exelon had not performed the timed test required by 10 CFR 50.63 to show that actions required to provide power to the blacked-out unit from the AAC could be performed within the analysis requirements. As a result, the team concluded that Exelon did not demonstrate that the AAC source would have the required availability and capability within the analyzed

timeline. Exelon entered the issue into their corrective action program for evaluation and resolution.

This issue was more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design or qualification deficiency confirmed not to result in a loss of functionality. The finding had a cross-cutting aspect in the area in the area of Problem Identification and Resolution, Corrective Action Program Component, because Exelon did not thoroughly evaluate problems such that resolutions address causes and extent of conditions and did not conduct effectiveness reviews to ensure problems are resolved. Specifically, Exelon's recent safety evaluation did not evaluate problems associated with a loss of an EDG due to a high temperature condition and the impact on the SBO AAC power source availability. (IMC 0310, Aspect P.1(c)) (1R17.1b)

Inspection Report# : 2011007 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: N/A Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Make a 10CFR 50.72(b)(2)(xi) Notification
The inspectors identified a Severity Level (SL) IV NCV of 10 Code of Federal Regulations (CFR) 50.72(b)(2)(xi) because the NRC Operations Center was not notified via the Emergency Notification System (ENS) within four hours of a reportable event related to the health and safety of the public and protection of the environment for which notification to other government agencies was made. Exelon did make a courtesy notification to the NRC resident inspection staff. However, Exelon did not formally report, to the NRC Operations Center, the notification of other government agencies regarding an abnormal radioactive liquid release, from the Limerick Generating Station common cooling tower blow down line on March 19, 2012. Inspectors performed system walkdowns and conducted an event follow-up inspection on March 20, 2012 to assess the impacts of the overflow event.
This deficiency was evaluated using the traditional enforcement process since the failure to make a required report could adversely impact the NRC's ability to carry out its regulatory mission. The deficiency was evaluated using the criteria contained in Section 6.9(d)(9) of the NRC's Enforcement Policy and determined to meet the criteria for disposition as a SL IV NCV. Exelon took immediate corrective actions pertaining to the abnormal release, including suspension of effluent releases via the cooling tower blow down line and initiation of actions to evaluate the cause and preclude recurrence, as well as the conduct of public dose calculations.

Additionally, upon identification by the NRC that the issue was reportable, Exelon subsequently reported the event to the NRC Operations Center on April 11, 2012. Exelon also entered this issue into its corrective action program (IR 1347829).
This violation involved a failure to make a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using the traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Section 6.9, "lnaccurate and Incomplete Information or Failure to Make a Required Report," example (d)(9), which states, "A licensee fails to make a report required by 10 CFR 50.72 or 10 CFR 50.73," the NRC determined that this violation is more than minor and categorized as a SL lV violation. Because this violation involves the traditional enforcement process with no underlying technical violation that would be considered more than minor in accordance with IMC 0612, a cross-cutting aspect is not assigned to this violation.
(Section 4OA3)
Inspection Report# : 2012002 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Jun 15, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to submit an LER revision for conditions Prohibited by TS associated with the HPCI and RCIC Systems
SL-IV: The inspectors identified a Severity Level (SL) IV non-cited violation (NCV) of 10 CFR Part 50.73, “Licensee Event Report [LER] System,” because violations of Technical Specifications (TS) 3.5.1 and 3.0.3 for the condition of the high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) systems being simultaneously inoperable were not reported to the NRC within 60 days of discovery. After this was identified by the inspectors, the issue was entered into Exelon’s CAP as IR 1377559.

The inspectors determined that the failure to revise LER 05000353/2011-003-00 within 60 days of initial issuance on July 21, 2011 to include the violations of TS 3.5.1 and 3.0.3 in accordance with 10 CFR Part 50.73 was a performance deficiency that was reasonably within Exelon’s ability to foresee and correct, and should have been prevented. Because the issue impacted the regulatory process, in that a violation of Technical Specifications was not reported to

the NRC within the required timeframe, and delayed the NRC's opportunity to review the matter in its completion, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.9.d.9 from the NRC Enforcement Policy, the inspectors determined the performance deficiency was a SL IV violation, because Exelon personnel did not make a report required by 10 CFR Part 50.73. In accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, traditional enforcement issues are not assigned cross-cutting aspects. The significance of the associated performance deficiency was screened against the ROP per the guidance of IMC 0612, Appendix B, and the inspectors determined it to be minor because it was not similar to Appendix E examples, was not a precursor to a significant event, did not cause a PI to exceed a threshold, did not adversely affect cornerstone objectives, and if left uncorrected would not have lead to a more significant safety concern. As such, no ROP finding was identified and no cross-cutting aspect was assigned. (Section 4OA4)
Inspection Report# : 2012008 *(pdf)*

Last modified : November 30, 2012

Limerick 2
4Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish and Perform Adequate Preventive Maintenance on 480VAC Load Center Power Transformers
A self-revealing NCV of Limerick Technical Specification (TS) 6.8, "Procedures and Programs," was identified for failure to establish and perform adequate preventive maintenance (PM) activities to routinely inspect the 480 volt-alternating current (VAC) load center power transformers. As a result, Limerick experienced a transformer related fault that could have been prevented by PM which resulted in a manual reactor scram of Unit 1 on July 18, 2012. Corrective actions implemented by Limerick as a result of this transformer failure included advancing the thermography window installation schedule to align with each transformers feeder breaker trip test calibration. Limerick also performed thermography inspections on the other load center transformers and developed corrective actions (Issue Report (IR) 1355930 and 1390033) to reinstitute the clean and inspect PM on all load center transformers at an increased frequency of 8 years vice 20 years.
The finding was determined to be more than minor because it was associated with the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was determined to be of very low safety significance because the finding caused a reactor trip but not the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding was determined to have a cross-cutting aspect because, although the performance deficiency occurred more than three years ago, the performance characteristic associated with ineffective PM implementation continues to exist within Limerick's PM program and is indicative of present performance. The cross-cutting aspect associated with this performance deficiency is in the Resources component of the Human Performance area because the licensee did not ensure that personnel, equipment, procedures and other resources were adequate to assure long term plant safety through maintenance and the minimization of long-standing equipment issues [H.2 (a)]. (Section 4OA3.7)
Inspection Report# : 2012004 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Revise EDG Tank Cleaning Work Instructions
A self-revealing Green NCV of Technical Specification 6.8.1, "Administrative Controls-Procedures," was identified because Exelon did not implement procedure use and adherence requirements when workers changed the scope of work on EDG fuel oil day tanks and did not revise the work instructions when they determined that work could not be performed as written. This resulted in EDG D13 accruing approximately 40 hours of unplanned unavailability

between December 14 and 16, 2012.

This finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be self-revealing because it was revealed through the receipt of alarms during operation which required no active and deliberate observation by the licensee. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix A, “The Significance Determination Process for Findings at Power,” because the finding did not represent an actual loss of function a single train for greater than the TS allowed outage time.

This finding had a cross-cutting aspect in the area of Human Performance, Work Practices, because Exelon did not ensure that personnel followed procedures [H.4(b)]. Specifically, work order procedural steps to clean the fuel oil tank were not completed and a procedurally required change to written work instructions was not implemented when station personnel determined that the fuel oil tank cleaning would be based on the need to clean the tank as determined by tank inspection results. (Section 1R19)

Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 31, 2012
Identified By: NRC
Item Type: FIN Finding
Failure to Administer an NRC Annual Operating Test Simulator Scenario Re-examination That Met Procedural Requirements
The inspectors identified a Green finding of of Exelon procedure TQ-AA-150, “Operator Training Programs,” and TQ-AA-155, “Conduct of Simulator Training and Evaluation,” based on a determination that the minimum number of scenarios required for simulator re-examination was not administered following a crew failure of the dynamic simulator scenario portion of the annual operating exam during week two of the 2012 Licensed Operator Requalification Training (LORT) Annual Operating Test. The Exelon entered this finding into their corrective action process (IR 1437839), conducted a prompt investigation (PINV), assigned an action to complete the annual operating exam scenario set for the crew in question, and initiated an Apparent Cause Evaluation.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the Mitigation Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The risk importance of this issue was evaluated using IMC 0609, Appendix I, “Licensed Operator Requalification Significance Determination Process (SDP).” Based on this screening criteria, the finding (inadequate retest) was characterized by the SDP as having very low safety significance (Green) because crew remediation was conducted and a partial re-evaluation performed. The finding has a cross-cutting aspect in the area of Human Performance, Work Practices, H.4(b), in that personnel work practices did not support human performance since personnel did not follow their procedural requirements to determine and ensure that simulator scenario re-exam administered following a failed Annual Operating Test was commensurate with the original exam failure.

FIN 05000352, 353/2012005-01, Failure to Administer an NRC Annual Operating Test Simulator Scenario Re-examination That Met Procedural Requirements

Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Evaluation of Voltage to Safety-Related Equipment with Offsite Power Available
The team identified a non-cited violation of Title 10 of the Code of Federat
Regutations (10 CFR) Part 50, Appendix B, Criterion lll, "Design Control," which states, in

part, "design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program." The team determined that Exelon did not verify that adequate voltages would be available to safetyrelated equipment powered from the 4kV, 480vac, and 120Yac distribution systems during a design basis loss-of-coolant accident with offsite power available. Specifically, the team found that Exelon assumed a non-conservative offsite power voltage at the start of the event, used a non-conservative assumption for motor starting times, and did not have calculations that determined the minimum voltage level for the 480 Vac and 120Yac distribution level during post event electrical transients. Following questions from the team Exelon entered the issue into their corrective action program, revised existing calculations, performed new calculations, and completed evaluations to ensure that the minimum voltage level that would be reached during an event would be adequate at all three voltage levels. The team reviewed these calculations and evaluations and concluded the results of the work performed during the inspection were reasonable.

The team determined that the failure to verify adequate voltages at all voltage levels to safety-related equipment during a design basis loss-of-coolant accident was a performance deficiency. This issue was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor lssues," Example 3.j, in that the design analysis deficiency resutted in a condition where the team had reasonable doubt of operability of the safety-related busses. In addition, it was associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualificalion deficiency confirmed not to result in loss of operability or functionality. This finding had a crosscutting aspect in the area of Human Performance, Resources, because Exelon did not provide complete, accurate and up-to-date design documentation to plant personnel and because these calculations had been recently revised. (lMC 0310, H.2(c))
(Section 1R21.2.1.1 5.1)
Inspection Report# : 2012007 *(pdf)*

Significance: G Dec 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
480V Motor Control Circuit Breaker Overcurrent Protection
The team identified a finding of very low safety significance (Green) involving a non-cited violation of Limerick Generating Station License Condition 2.C.(3), "Fire Protection," which states Exelon Generation Company shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the UFSAR. Specifically, the team found that Exelon's multiple high impedance fault (MHIF)analysis, developed to verify that post-fire safe shutdown equipment would remain available, used non-conservative overcurrent trip setpoints for 480 volt overcurrent protection devices. Specifically, the team found that molded case circuit breaker overcurrent protection did not protect against all possible faults currents that could be present on downstream equipment. "As a result, fault current greater than that assumed in the MHIF analysis could propagate past the circuit breaker and trip upstream equipment. Exelon entered the issue into their corrective action program and performed an analysis that showed credited equipment would be available. The team concluded the results of the work performed were reasonable.

The team determined that Exelon's selection of breaker trip values for use in the MHIF analysis was non-conservative and was a performance deficiency. Specifically, the post-fire safe shutdown MHIF analysis did not use worst case or maximum fault current to

verify that fire induced fault currents that propagated past branch feeder circuit breakers would not cause the motor control center source breaker to overload and trip. This issue was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor lssues," Example 3.j, in that the design analysis deficiency resulted in a condition where the team had reasonable doubt of operability of the MCC during a fire. In addition, this issue was associated with the Fire Protection attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because the finding affected the post-fire safe shutdown category and it had a low degradation rating. This finding did not have a cross-cutting aspect because the design requirements of the breakers had not changed from initial startup and therefore it does not reflect current licensee performance. (Section 1R21.2.1.15.2)
Inspection Report# : 2012007 *(pdf)*

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Post Maintenance Testing Following Circuit Breaker Replacement
A self-revealing NCV of TS 6.8, “Procedures and Programs,” was identified because Exelon did not maintain adequate maintenance procedures associated with work performed on the Unit 2 ‘B’ residual heat removal (RHR) pump motor circuit breaker. Specifically, Exelon did not perform appropriate post maintenance testing following the replacement of the Unit 2 ‘B’ RHR pump breaker on November 30, 2011. Despite the circuit breaker replacement affecting necessary pump support equipment operation due to circuit breaker dimensional differences, the procedure did not require a check to assure the support equipment was not adversely affected following the installation. As a result, the Unit 2 ‘B’ RHR pump was inoperable for the low pressure coolant injection function when the pump was operating in the suppression pool cooling mode because the pump’s minimum flow valve would not have opened automatically following the receipt of a loss of coolant accident signal. This condition existed from November 30, 2011 until the condition was corrected on June 27, 2012. This issue was entered into the Exelon CAP as IR 1381792. This self-revealing finding was determined to be more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because it did not represent a loss of system function and did not represent an actual loss of function for two separate safety systems out-of-service for greater than its TS Allowed Outage Time. The finding had a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not provide work packages with sufficient detailed instructions to assure nuclear safety [H.2(c)]. (Section 4OA2.2)
Inspection Report# : 2012004 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Conduct Timely Corrective Actions to Replace Age Degraded Relays
The inspectors identified a Green NCV of 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion XVI, “Corrective Action,” because Exelon failed to conduct timely corrective actions to preclude repetition of a condition adverse to quality involving the replacement of age degraded direct current motor operated valve (DC MOV) relays. Specifically, Exelon experienced multiple failures of ARD type relays that were known to be susceptible to age-related degradation once past their vendor recommended lifetime. Exelon’s equipment apparent cause evaluations (EACEs) for the most recent ARD relay failures failed to prioritize the replacement of these relays which led the

preventative maintenance (PM) for the relay replacement to be scheduled as much as 8 years past their vendor recommended lifetime and contributed to the March 2012 relay failure. In addition to the untimely corrective actions, the licensee's extent of condition performed as part of the 2010 EACE was too narrowly focused, contributing to their failure to recognize and address all the relays that were susceptible to age-related failures. Exelon identified the narrowly focused EOC as part of their 2012 EACE and has entered both issues in their corrective action program (CAP) for resolution (AR 1380603, AR 1380605 and ACIT 1341695-14).

The inspectors determined that the failure to implement timely corrective actions was a performance deficiency. The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was determined to be of very low safety significance (Green) using Attachment 4 to IMC 0609, "Significance Determination Process," because the incomplete corrective actions did not result in an actual loss of safety function. The finding has a cross cutting aspect in the corrective action component of the problem identification and resolution area because the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary, including properly classifying, prioritizing, and evaluating for operability and reportability conditions adverse to quality. [P.1(c)] (Section 1R13)

Inspection Report# : 2012003 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: N/A Oct 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Radiation Protection Procedures for Personnel Monitoring
NRC Letter, dated October 18, 2012 (ML12292A140), documented an NRC Office of Investigation review to determine whether a contract foreman deliberately failed to follow procedures on the use of electron dosimetry while at Limerick (NRC Investigation Report Number 1-2012-030). The NRC concluded that the contract foreman deliberately failed to follow an NRC-required procedure (RP-AA-1008) regarding the use of dosimetry and that the issue was being treated as an NCV. In order to facilitate entering this issue into the NRC's Plant Issues Matrix and assessment process this issue is identified as NCV 05000352, 353/2012005-03, Failure to Follow Radiation Protection Procedures for Personnel Monitoring.
Inspection Report# : 2012005 *(pdf)*

Significance: N/A Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Make a 10CFR 50.72(b)(2)(xi) Notification
The inspectors identified a Severity Level (SL) IV NCV of 10 Code of Federal Regulations (CFR) 50.72(b)(2)(xi) because the NRC Operations Center was not notified via the Emergency Notification System (ENS) within four hours of a reportable event related to the health and safety of the public and protection of the environment for which notification to other government agencies was made. Exelon did make a courtesy notification to the NRC resident inspection staff. However, Exelon did not formally report, to the NRC Operations

Center, the notification of other government agencies regarding an abnormal radioactive liquid release, from the Limerick Generating Station common cooling tower blow down line on March 19, 2012. Inspectors performed system walkdowns and conducted an event follow-up inspection on March 20, 2012 to assess the impacts of the overflow event.
This deficiency was evaluated using the traditional enforcement process since the failure to make a required report could adversely impact the NRC's ability to carry out its regulatory mission. The deficiency was evaluated using the criteria contained in Section 6.9(d)(9) of the NRC's Enforcement Policy and determined to meet the criteria for disposition as a SL IV NCV.
Exelon took immediate corrective actions pertaining to the abnormal release, including suspension of effluent releases via the cooling tower blow down line and initiation of actions to evaluate the cause and preclude recurrence, as well as the conduct of public dose calculations. Additionally, upon identification by the NRC that the issue was reportable, Exelon subsequently reported the event to the NRC Operations Center on April 11, 2012. Exelon also entered this issue into its corrective action program (IR 1347829).
This violation involved a failure to make a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using the traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Section 6.9, "lnaccurate and Incomplete Information or Failure to Make a Required Report," example (d)(9), which states, "A licensee fails to make a report required by 10 CFR 50.72 or 10 CFR 50.73," the NRC determined that this violation is more than minor and categorized as a SL lV violation. Because this violation involves the traditional enforcement process with no underlying technical violation that would be considered more than minor in accordance with IMC 0612, a cross-cutting aspect is not assigned to this violation.
(Section 4OA3)
Inspection Report# : 2012002 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Nov 09, 2012
Identified By: NRC
Item Type: FIN Finding
Biennial PI&R inspection summary
The inspectors concluded that Exelon was generally effective in identifying, evaluating, and resolving problems. Exelon personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Exelon appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Exelon typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner. Notwithstanding, the

inspectors identified one finding in the area of prioritization and evaluation of issues.

The inspectors concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to LGS operations. In addition, based on those items selected for review, the inspectors determined that Exelon's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2012010 *(pdf)*

Significance: N/A Jun 15, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to submit an LER revision for conditions Prohibited by TS associated with the HPCI and RCIC Systems
SL-IV: The inspectors identified a Severity Level (SL) IV non-cited violation (NCV) of 10 CFR Part 50.73, "Licensee Event Report [LER] System," because violations of Technical Specifications (TS) 3.5.1 and 3.0.3 for the condition of the high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) systems being simultaneously inoperable were not reported to the NRC within 60 days of discovery. After this was identified by the inspectors, the issue was entered into Exelon's CAP as IR 1377559.

The inspectors determined that the failure to revise LER 05000353/2011-003-00 within 60 days of initial issuance on July 21, 2011 to include the violations of TS 3.5.1 and 3.0.3 in accordance with 10 CFR Part 50.73 was a performance deficiency that was reasonably within Exelon's ability to foresee and correct, and should have been prevented. Because the issue impacted the regulatory process, in that a violation of Technical Specifications was not reported to the NRC within the required timeframe, and delayed the NRC's opportunity to review the matter in its completion, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.9.d.9 from the NRC Enforcement Policy, the inspectors determined the performance deficiency was a SL IV violation, because Exelon personnel did not make a report required by 10 CFR Part 50.73. In accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, traditional enforcement issues are not assigned cross-cutting aspects. The significance of the associated performance deficiency was screened against the ROP per the guidance of IMC 0612, Appendix B, and the inspectors determined it to be minor because it was not similar to Appendix E examples, was not a precursor to a significant event, did not cause a PI to exceed a threshold, did not adversely affect cornerstone objectives, and if left uncorrected would not have lead to a more significant safety concern. As such, no ROP finding was identified and no cross-cutting aspect was assigned. (Section 4OA4)
Inspection Report# : 2012008 *(pdf)*

Last modified : February 28, 2013

Limerick 2
1Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish and Perform Adequate Preventive Maintenance on 480VAC Load Center Power Transformers
A self-revealing NCV of Limerick Technical Specification (TS) 6.8, "Procedures and Programs," was identified for failure to establish and perform adequate preventive maintenance (PM) activities to routinely inspect the 480 volt-alternating current (VAC) load center power transformers. As a result, Limerick experienced a transformer related fault that could have been prevented by PM which resulted in a manual reactor scram of Unit 1 on July 18, 2012. Corrective actions implemented by Limerick as a result of this transformer failure included advancing the thermography window installation schedule to align with each transformers feeder breaker trip test calibration. Limerick also performed thermography inspections on the other load center transformers and developed corrective actions (Issue Report (IR) 1355930 and 1390033) to reinstitute the clean and inspect PM on all load center transformers at an increased frequency of 8 years vice 20 years.
The finding was determined to be more than minor because it was associated with the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was determined to be of very low safety significance because the finding caused a reactor trip but not the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding was determined to have a cross-cutting aspect because, although the performance deficiency occurred more than three years ago, the performance characteristic associated with ineffective PM implementation continues to exist within Limerick's PM program and is indicative of present performance. The cross-cutting aspect associated with this performance deficiency is in the Resources component of the Human Performance area because the licensee did not ensure that personnel, equipment, procedures and other resources were adequate to assure long term plant safety through maintenance and the minimization of long-standing equipment issues [H.2 (a)]. (Section 4OA3.7)
Inspection Report# : 2012004 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation

Failure to Revise EDG Tank Cleaning Work Instructions
A self-revealing Green NCV of Technical Specification 6.8.1, "Administrative Controls-Procedures," was identified because Exelon did not implement procedure use and adherence requirements when workers changed the scope of work on EDG fuel oil day tanks and did not revise the work instructions when they determined that work could not be performed as written. This resulted in EDG D13 accruing approximately 40 hours of unplanned unavailability between December 14 and 16, 2012.

This finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be self-revealing because it was revealed through the receipt of alarms during operation which required no active and deliberate observation by the licensee. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," because the finding did not represent an actual loss of function a single train for greater than the TS allowed outage time.

This finding had a cross-cutting aspect in the area of Human Performance, Work Practices, because Exelon did not ensure that personnel followed procedures [H.4(b)]. Specifically, work order procedural steps to clean the fuel oil tank were not completed and a procedurally required change to written work instructions was not implemented when station personnel determined that the fuel oil tank cleaning would be based on the need to clean the tank as determined by tank inspection results. (Section 1R19)

Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 31, 2012
Identified By: NRC
Item Type: FIN Finding
Failure to Administer an NRC Annual Operating Test Simulator Scenario Re-examination That Met Procedural Requirements
The inspectors identified a Green finding of of Exelon procedure TQ-AA-150, "Operator Training Programs," and TQ-AA-155, "Conduct of Simulator Training and Evaluation," based on a determination that the minimum number of scenarios required for simulator re-examination was not administered following a crew failure of the dynamic simulator scenario portion of the annual operating exam during week two of the 2012 Licensed Operator Requalification Training (LORT) Annual Operating Test. The Exelon entered this finding into their corrective action process (IR 1437839), conducted a prompt investigation (PINV), assigned an action to complete the annual operating exam scenario set for the crew in question, and initiated an Apparent Cause Evaluation.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the Mitigation Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The risk importance of this issue was evaluated using IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)." Based on this screening criteria, the finding (inadequate retest) was characterized by the SDP as having very low safety significance (Green) because crew remediation was conducted and a partial re-evaluation performed. The finding has a cross-cutting aspect in the area of Human Performance, Work Practices, H.4(b), in that personnel work practices did not support human performance since personnel did not follow their procedural requirements to determine and ensure that simulator scenario re-exam administered following a failed Annual Operating Test was commensurate with the original exam failure.

FIN 05000352, 353/2012005-01, Failure to Administer an NRC Annual Operating Test Simulator Scenario Re-examination That Met Procedural Requirements

Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Evaluation of Voltage to Safety-Related Equipment with Offsite Power Available
The team identified a non-cited violation of Title 10 of the Code of Federat Regutations (10 CFR) Part 50, Appendix B, Criterion lll, "Design Control," which states, in part, "design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program." The team determined that Exelon did not verify that adequate voltages would be available to safetyrelated equipment powered from the 4kV, 480vac, and 120Yac distribution systems during a design basis loss-of-coolant accident with offsite power available. Specifically, the team found that Exelon assumed a non-conservative offsite power voltage at the start of the event, used a non-conservative assumption for motor starting times, and did not have calculations that determined the minimum voltage level for the 480 Vac and 120Yac distribution level during post event electrical transients. Following questions from the team Exelon entered the issue into their corrective action program, revised existing calculations, performed new calculations, and completed evaluations to ensure that the minimum voltage level that would be reached during an event would be adequate at all three voltage levels. The team reviewed these calculations and evaluations and concluded the results of the work performed during the inspection were reasonable.

The team determined that the failure to verify adequate voltages at all voltage levels to safety-related equipment during a design basis loss-of-coolant accident was a performance deficiency. This issue was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor lssues," Example 3.j, in that the design analysis deficiency resutted in a condition where the team had reasonable doubt of operability of the safety-related busses. In addition, it was associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualificalion deficiency confirmed not to result in loss of operability or functionality. This finding had a crosscutting aspect in the area of Human Performance, Resources, because Exelon did not provide complete, accurate and up-to-date design documentation to plant personnel and because these calculations had been recently revised. (lMC 0310, H.2(c))
(Section 1R21.2.1.1 5.1)
Inspection Report# : 2012007 *(pdf)*

Significance: G Dec 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
480V Motor Control Circuit Breaker Overcurrent Protection
The team identified a finding of very low safety significance (Green) involving a non-cited violation of Limerick Generating Station License Condition 2.C.(3), "Fire Protection," which states Exelon Generation Company shall implement and maintain in

effect all provisions of the approved Fire Protection Program as described in the UFSAR. Specifically, the team found that Exelon's multiple high impedance fault (MHIF)analysis, developed to verify that post-fire safe shutdown equipment would remain available, used non-conservative overcurrent trip setpoints for 480 volt overcurrent protection devices. Specifically, the team found that molded case circuit breaker overcurrent protection did not protect against all possible faults currents that could be present on downstream equipment. "As a result, fault current greater than that assumed in the MHIF analysis could propagate past the circuit breaker and trip upstream equipment. Exelon entered the issue into their corrective action program and performed an analysis that showed credited equipment would be available. The team concluded the results of the work performed were reasonable.

The team determined that Exelon's selection of breaker trip values for use in the MHIF analysis was non-conservative and was a performance deficiency. Specifically, the post-fire safe shutdown MHIF analysis did not use worst case or maximum fault current to verify that fire induced fault currents that propagated past branch feeder circuit breakers would not cause the motor control center source breaker to overload and trip. This issue was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor lssues," Example 3.j, in that the design analysis deficiency resulted in a condition where the team had reasonable doubt of operability of the MCC during a fire. In addition, this issue was associated with the Fire Protection attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because the finding affected the post-fire safe shutdown category and it had a low degradation rating. This finding did not have a cross-cutting aspect because the design requirements of the breakers had not changed from initial startup and therefore it does not reflect current licensee performance. (Section 1R21.2.1.15.2)
Inspection Report# : 2012007 *(pdf)*

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Post Maintenance Testing Following Circuit Breaker Replacement
A self-revealing NCV of TS 6.8, “Procedures and Programs,” was identified because Exelon did not maintain adequate maintenance procedures associated with work performed on the Unit 2 ‘B’ residual heat removal (RHR) pump motor circuit breaker. Specifically, Exelon did not perform appropriate post maintenance testing following the replacement of the Unit 2 ‘B’ RHR pump breaker on November 30, 2011. Despite the circuit breaker replacement affecting necessary pump support equipment operation due to circuit breaker dimensional differences, the procedure did not require a check to assure the support equipment was not adversely affected following the installation. As a result, the Unit 2 ‘B’ RHR pump was inoperable for the low pressure coolant injection function when the pump was operating in the suppression pool cooling mode because the pump’s minimum flow valve would not have opened automatically following the receipt of a loss of coolant accident signal. This condition existed from November 30, 2011 until the condition was corrected on June 27, 2012. This issue was entered into the Exelon CAP as IR 1381792. This self-revealing finding was determined to be more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that

respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because it did not represent a loss of system function and did not represent an actual loss of function for two separate safety systems out-of-service for greater than its TS Allowed Outage Time. The finding had a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not provide work packages with sufficient detailed instructions to assure nuclear safety [H.2(c)]. (Section 4OA2.2)
Inspection Report# : 2012004 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Conduct Timely Corrective Actions to Replace Age Degraded Relays
The inspectors identified a Green NCV of 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon failed to conduct timely corrective actions to preclude repetition of a condition adverse to quality involving the replacement of age degraded direct current motor operated valve (DC MOV) relays. Specifically, Exelon experienced multiple failures of ARD type relays that were known to be susceptible to age-related degradation once past their vendor recommended lifetime. Exelon's equipment apparent cause evaluations (EACEs) for the most recent ARD relay failures failed to prioritize the replacement of these relays which led the preventative maintenance (PM) for the relay replacement to be scheduled as much as 8 years past their vendor recommended lifetime and contributed to the March 2012 relay failure. In addition to the untimely corrective actions, the licensee's extent of condition performed as part of the 2010 EACE was too narrowly focused, contributing to their failure to recognize and address all the relays that were susceptible to age-related failures. Exelon identified the narrowly focused EOC as part of their 2012 EACE and has entered both issues in their corrective action program (CAP) for resolution (AR 1380603, AR 1380605 and ACIT 1341695-14).

The inspectors determined that the failure to implement timely corrective actions was a performance deficiency. The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was determined to be of very low safety significance (Green) using Attachment 4 to IMC 0609, "Significance Determination Process," because the incomplete corrective actions did not result in an actual loss of safety function. The finding has a cross cutting aspect in the corrective action component of the problem identification and resolution area because the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary, including properly classifying, prioritizing, and evaluating for operability and reportability conditions adverse to quality. [P.1(c)] (Section 1R13)

Inspection Report# : 2012003 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: N/A Oct 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Radiation Protection Procedures for Personnel Monitoring
NRC Letter, dated October 18, 2012 (ML12292A140), documented an NRC Office of Investigation review to determine whether a contract foreman deliberately failed to follow procedures on the use of electron dosimetry while at Limerick (NRC Investigation Report Number 1-2012-030). The NRC concluded that the contract foreman deliberately failed to follow an NRC-required procedure (RP-AA-1008) regarding the use of dosimetry and that the issue was being treated as an NCV. In order to facilitate entering this issue into the NRC's Plant Issues Matrix and assessment process this issue is identified as NCV 05000352, 353/2012005-03, Failure to Follow Radiation Protection Procedures for Personnel Monitoring.
Inspection Report# : 2012005 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Nov 09, 2012
Identified By: NRC
Item Type: FIN Finding
Biennial PI&R inspection summary
The inspectors concluded that Exelon was generally effective in identifying, evaluating, and resolving problems. Exelon personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Exelon appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Exelon typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner. Notwithstanding, the inspectors identified one finding in the area of prioritization and evaluation of issues.

The inspectors concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to LGS operations. In addition, based on those items selected for review, the inspectors determined that Exelon's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2012010 *(pdf)*

Significance: N/A Jun 15, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to submit an LER revision for conditions Prohibited by TS associated with the HPCI and RCIC Systems
SL-IV: The inspectors identified a Severity Level (SL) IV non-cited violation (NCV) of 10 CFR Part 50.73, "Licensee Event Report [LER] System," because violations of Technical Specifications (TS) 3.5.1 and 3.0.3 for the condition of the high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) systems being simultaneously inoperable were not reported to the NRC within 60 days of discovery. After this was identified by the inspectors, the issue was entered into Exelon's CAP as IR 1377559.

The inspectors determined that the failure to revise LER 05000353/2011-003-00 within 60 days of initial issuance on July 21, 2011 to include the violations of TS 3.5.1 and 3.0.3 in accordance with 10 CFR Part 50.73 was a performance deficiency that was reasonably within Exelon's ability to foresee and correct, and should have been prevented. Because the issue impacted the regulatory process, in that a violation of Technical Specifications was not reported to the NRC within the required timeframe, and delayed the NRC's opportunity to review the matter in its completion, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.9.d.9 from the NRC Enforcement Policy, the inspectors determined the performance deficiency was a SL IV violation, because Exelon personnel did not make a report required by 10 CFR Part 50.73. In accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, traditional enforcement issues are not assigned cross-cutting aspects. The significance of the associated performance deficiency was screened against the ROP per the guidance of IMC 0612, Appendix B, and the inspectors determined it to be minor because it was not similar to Appendix E examples, was not a precursor to a significant event, did not cause a PI to exceed a threshold, did not adversely affect cornerstone objectives, and if left uncorrected would not have lead to a more significant safety concern. As such, no ROP finding was identified and no cross-cutting aspect was assigned. (Section 4OA4)
Inspection Report# : 2012008 *(pdf)*

Last modified : June 04, 2013

Limerick 2
2Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2013
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Follow Partial Procedure Change Process
A self-revealing Green finding of Technical Specification 6.8.1, “Administrative Controls-Procedures,” was identified because Exelon personnel did not implement procedure use and adherence requirements when operators changed the scope of work for surveillance testing of main turbine stop and control valves. This resulted in a reactor protection system automatic scram on April 16, 2013. This issue was identified in the Exelon CAP as IRs 1503749 and 1525552

The failure of station operators to follow the partial procedure performance process during the performance of two TS required surveillances was a performance deficiency that was reasonably within Exelon’s ability to foresee and correct and could have been prevented. The performance deficiency was also contrary to Exelon’s procedure use and adherence requirements. This finding was more than minor because, if improper implementation of the partial procedure performance process is left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern such as a more severe plant transient or engineered safeguard system actuation or malfunction. Additionally, this issue is similar to example 4.b in IMC 0612, Appendix E, “Examples of Minor Issues,” in that the procedural error resulted in a reactor scram or other transient. The finding was determined to be self-revealing because it was revealed through the receipt of a scram signal during performance of a surveillance test which required no active and deliberate observation by the licensee. The finding was determined to be of very low safety significance (Green) in accordance with Appendix G of IMC 0609, "Shutdown Operations Significance Determination Process,” because the finding did not require a quantitative assessment. A quantitative assessment was not required because the finding did not cause a loss of thermal margin, a loss of inventory, or degrade the ability to add inventory to the reactor coolant system.

This finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because Exelon did not ensure that personnel made safety-significant or risk significant decisions using a systematic process to ensure that safety is maintained [H.1(a)]. Specifically, the partial procedure performance process was not properly implemented which resulted in plant conditions that were improper for the next evolution. This resulted in a reactor protection system automatic scram on April 16, 2013. (Section 4OA3.1)

Inspection Report# : 2013003 *(pdf)*

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish and Perform Adequate Preventive Maintenance on 480VAC Load Center Power Transformers
A self-revealing NCV of Limerick Technical Specification (TS) 6.8, “Procedures and Programs,“ was identified for failure to establish and perform adequate preventive maintenance (PM) activities to routinely inspect the 480 volt-alternating current (VAC) load

center power transformers. As a result, Limerick experienced a transformer related fault that could have been prevented by PM which resulted in a manual reactor scram of Unit 1 on July 18, 2012. Corrective actions implemented by Limerick as a result of this transformer failure included advancing the thermography window installation schedule to align with each transformers feeder breaker trip test calibration. Limerick also performed thermography inspections on the other load center transformers and developed corrective actions (Issue Report (IR) 1355930 and 1390033) to reinstitute the clean and inspect PM on all load center transformers at an increased frequency of 8 years vice 20 years.
The finding was determined to be more than minor because it was associated with the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was determined to be of very low safety significance because the finding caused a reactor trip but not the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding was determined to have a cross-cutting aspect because, although the performance deficiency occurred more than three years ago, the performance characteristic associated with ineffective PM implementation continues to exist within Limerick's PM program and is indicative of present performance. The cross-cutting aspect associated with this performance deficiency is in the Resources component of the Human Performance area because the licensee did not ensure that personnel, equipment, procedures and other resources were adequate to assure long term plant safety through maintenance and the minimization of long-standing equipment issues [H.2 (a)]. (Section 4OA3.7)
Inspection Report# : 2012004 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify and Correct a Condition Adverse to Quality Associated with Emergency Diesel Generator D24
The inspectors identified a Green non-cited violation (NCV) of 10 Code of Federal Regulation (CFR) 50, Appendix B, Criterion XVI, "Corrective Action", because Exelon personnel did not identify and correct a condition adverse to quality associated with emergency diesel generator (EDG) D24 lubricating oil pipe fitting supports. This resulted in EDG D24 being in a degraded condition from November 2012 until the condition was corrected in May 2013. Exelon personnel entered this issue into the CAP as IRs 1507365, 1509125, 1511869, 1512745, 1526780, and 1528088.

The failure of Exelon personnel to identify and correct the degraded instrument line clamp and insert on EDG D24's lubricating oil supply pressure sensing line following the failure of a pipe fitting on November 13, 2012 is a performance deficiency that was reasonably within Exelon's ability to foresee and correct. The issue report (IR) written to document the issue (IR 1439284) was inappropriately classified as not a Critical Component Failure. This resulted in the issue receiving a lower level of investigation (work group evaluation versus an apparent cause or root cause evaluation). This NRC-identified finding was more than minor because it is associated with equipment performance and affected the Mitigating System cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating event to prevent undesirable consequences. The inspectors evaluated the finding using Appendix A, "The Significance Determination Process for Findings At-Power," to IMC 0609,

“Significance Determination Process.” Exelon personnel conducted vibration tested which determined that the pipe fitting crack initiation and propagation occurred during engine slow start speed acceleration. This was based vibration data which showed two vibration peaks at speeds during the acceleration. Also, the crack did not propagate during normal speed operation based on the fact that the leak size did not increased during monthly testing on April 27, 2013. The inspectors determined this finding did not represent an actual loss of function of a single train for greater than it Technical Specification Allowed Outage Time. Therefore, the inspectors determined the finding to be of very low safety significance (Green).

This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon personnel did not thoroughly evaluate the cause of the November 12, 2012 lubricating oil system pipe fitting crack such that the resolutions address causes and extent of conditions [P.1(c)]. Specifically, although failure analysis determined that the cause of the pipe fitting failure was due to high cycle fatigue a thorough investigation into all potential causes (e.g., excessive vibrations, missing pipe support) was not performed. This resulted in EDG D24 being inoperable for greater than the TS allowed outage time from November 13, 2012 until the condition was corrected on May 12, 2013. (Section 1R15)

Inspection Report# : 2013003 *(pdf)*

Significance: G May 24, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Fire Brigade Transportation
The NRC identified a Green, Non-Cited Violation (NCV) of License Condition 2.C.(3) of the Limerick Generating Station operating license, in that Exelon did not provide adequate procedural guidance for transporting the fire brigade and equipment to the spray pond pump house. Specifically, the existing fire procedure had incorrect guidance which would have needlessly delayed the fire brigade response. In response to this issue, Exelon initiated IR 1511763 and took prompt action to revise the affected procedures.

The finding was more than minor because it negatively affected the protection against external factors (fire) attribute of the mitigating systems cornerstone as related to the objective of ensuring the reliability and availability of the Essential Service Water pumps and Residual Heat Removal Service Water pumps. The finding was determined to be of very low safety significance (Green) in accordance with Section D of Exhibit 2 in Appendix A of IMC 0609, "The Significance Determination Process for Findings at Power,” because the fire brigade’s response time was mitigated by other defense-indepth elements such as: area combustible loading limits were not exceeded, installed fire detection systems were functional, and alternate means of safe shutdown were not impacted. The finding did not have a cross-cutting aspect because it was not indicative of current performance. (Section 1R05.03)
Inspection Report# : 2013007 *(pdf)*

Significance: G May 24, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Establish Preventive Maintenance for Safe Shutdown Transfer/Isolation Switches
The NRC identified a Green finding for the failure to establish a preventive maintenance strategy for fire safe shutdown transfer/isolation switches in accordance

with the Exelon procedure ER-AA-200, Preventive Maintenance Program. As a result, Exelon failed to ensure that the local control circuits for several 4KV breakers would be isolated from the effects of fire damage. In response to this issue, Exelon generated IR 01515025, and initiated actions to evaluate the switches and implement appropriate maintenance programs.

This finding was more than minor because it was associated with the protection against external factors (fire) attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, by failing to establish a preventive maintenance strategy for fire safe shutdown transfer/isolation switches, Exelon did not ensure that the local control circuits for several 4KV breakers would be isolated from the effects of fire damage. The team determined that the finding was of very low safety significance (Green), based on IMC 0609, Appendix F, “Fire Protection Significance Determination Process,” task number 1.3.1 because Exelon had demonstrated a reasonable expectation of functionality for these switches by recently testing comparable switches. The finding did not have a crosscutting aspect because it was not indicative of current performance. (Section 1R05.06)
Inspection Report# : 2013007 *(pdf)*

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Revise EDG Tank Cleaning Work Instructions
A self-revealing Green NCV of Technical Specification 6.8.1, “Administrative Controls-Procedures,” was identified because Exelon did not implement procedure use and adherence requirements when workers changed the scope of work on EDG fuel oil day tanks and did not revise the work instructions when they determined that work could not be performed as written. This resulted in EDG D13 accruing approximately 40 hours of unplanned unavailability between December 14 and 16, 2012.

This finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be self-revealing because it was revealed through the receipt of alarms during operation which required no active and deliberate observation by the licensee. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix A, “The Significance Determination Process for Findings at Power,” because the finding did not represent an actual loss of function a single train for greater than the TS allowed outage time.

This finding had a cross-cutting aspect in the area of Human Performance, Work Practices, because Exelon did not ensure that personnel followed procedures [H.4(b)]. Specifically, work order procedural steps to clean the fuel oil tank were not completed and a procedurally required change to written work instructions was not implemented when station personnel determined that the fuel oil tank cleaning would be based on the need to clean the tank as determined by tank inspection results. (Section 1R19)

Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 31, 2012
Identified By: NRC

Item Type: FIN Finding
Failure to Administer an NRC Annual Operating Test Simulator Scenario Re-examination That Met Procedural Requirements
The inspectors identified a Green finding of of Exelon procedure TQ-AA-150, “Operator Training Programs,” and TQ-AA-155, “Conduct of Simulator Training and Evaluation,” based on a determination that the minimum number of scenarios required for simulator re-examination was not administered following a crew failure of the dynamic simulator scenario portion of the annual operating exam during week two of the 2012 Licensed Operator Requalification Training (LORT) Annual Operating Test. The Exelon entered this finding into their corrective action process (IR 1437839), conducted a prompt investigation (PINV), assigned an action to complete the annual operating exam scenario set for the crew in question, and initiated an Apparent Cause Evaluation.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the Mitigation Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The risk importance of this issue was evaluated using IMC 0609, Appendix I, “Licensed Operator Requalification Significance Determination Process (SDP).” Based on this screening criteria, the finding (inadequate retest) was characterized by the SDP as having very low safety significance (Green) because crew remediation was conducted and a partial re-evaluation performed. The finding has a cross-cutting aspect in the area of Human Performance, Work Practices, H.4(b), in that personnel work practices did not support human performance since personnel did not follow their procedural requirements to determine and ensure that simulator scenario re-exam administered following a failed Annual Operating Test was commensurate with the original exam failure.

FIN 05000352, 353/2012005-01, Failure to Administer an NRC Annual Operating Test Simulator Scenario Re-examination That Met Procedural Requirements

Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Evaluation of Voltage to Safety-Related Equipment with Offsite Power Available
The team identified a non-cited violation of Title 10 of the Code of Federat Regutations (10 CFR) Part 50, Appendix B, Criterion lll, "Design Control," which states, in part, "design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program." The team determined that Exelon did not verify that adequate voltages would be available to safetyrelated equipment powered from the 4kV, 480vac, and 120Yac distribution systems during a design basis loss-of-coolant accident with offsite power available. Specifically, the team found that Exelon assumed a non-conservative offsite power voltage at the start of the event, used a non-conservative assumption for motor starting times, and did not have calculations that determined the minimum voltage level for the 480 Vac and 120Yac distribution level during post event electrical transients. Following questions from the team Exelon entered the issue into their corrective action program, revised existing calculations, performed new calculations, and completed evaluations to ensure that the minimum voltage level that would be reached during an event would be adequate at all three voltage levels. The team reviewed these calculations and evaluations and concluded the results of the work performed during the inspection were reasonable.

The team determined that the failure to verify adequate voltages at all voltage levels to

safety-related equipment during a design basis loss-of-coolant accident was a performance deficiency. This issue was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor lssues," Example 3.j, in that the design analysis deficiency resutted in a condition where the team had reasonable doubt of operability of the safety-related busses. In addition, it was associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualificalion deficiency confirmed not to result in loss of operability or functionality. This finding had a crosscutting aspect in the area of Human Performance, Resources, because Exelon did not provide complete, accurate and up-to-date design documentation to plant personnel and because these calculations had been recently revised. (lMC 0310, H.2(c)) (Section 1R21.2.1.1 5.1)
Inspection Report# : 2012007 *(pdf)*

Significance: G Dec 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
480V Motor Control Circuit Breaker Overcurrent Protection
The team identified a finding of very low safety significance (Green) involving a non-cited violation of Limerick Generating Station License Condition 2.C.(3), "Fire Protection," which states Exelon Generation Company shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the UFSAR. Specifically, the team found that Exelon's multiple high impedance fault (MHIF)analysis, developed to verify that post-fire safe shutdown equipment would remain available, used non-conservative overcurrent trip setpoints for 480 volt overcurrent protection devices. Specifically, the team found that molded case circuit breaker overcurrent protection did not protect against all possible faults currents that could be present on downstream equipment. "As a result, fault current greater than that assumed in the MHIF analysis could propagate past the circuit breaker and trip upstream equipment. Exelon entered the issue into their corrective action program and performed an analysis that showed credited equipment would be available. The team concluded the results of the work performed were reasonable.

The team determined that Exelon's selection of breaker trip values for use in the MHIF analysis was non-conservative and was a performance deficiency. Specifically, the post-fire safe shutdown MHIF analysis did not use worst case or maximum fault current to verify that fire induced fault currents that propagated past branch feeder circuit breakers would not cause the motor control center source breaker to overload and trip. This issue was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor lssues," Example 3.j, in that the design analysis deficiency resulted in a condition where the team had reasonable doubt of operability of the MCC during a fire. In addition, this issue was associated with the Fire Protection attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because the finding affected the post-fire safe shutdown category and it had a low degradation rating. This finding did not have a cross-cutting aspect because the design requirements of the breakers had not changed from initial startup and therefore it does not

reflect current licensee performance. (Section 1R21.2.1.15.2)
Inspection Report# : 2012007 *(pdf)*

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Post Maintenance Testing Following Circuit Breaker Replacement
A self-revealing NCV of TS 6.8, "Procedures and Programs," was identified because Exelon did not maintain adequate maintenance procedures associated with work performed on the Unit 2 'B' residual heat removal (RHR) pump motor circuit breaker. Specifically, Exelon did not perform appropriate post maintenance testing following the replacement of the Unit 2 'B' RHR pump breaker on November 30, 2011. Despite the circuit breaker replacement affecting necessary pump support equipment operation due to circuit breaker dimensional differences, the procedure did not require a check to assure the support equipment was not adversely affected following the installation. As a result, the Unit 2 'B' RHR pump was inoperable for the low pressure coolant injection function when the pump was operating in the suppression pool cooling mode because the pump's minimum flow valve would not have opened automatically following the receipt of a loss of coolant accident signal. This condition existed from November 30, 2011 until the condition was corrected on June 27, 2012. This issue was entered into the Exelon CAP as IR 1381792. This self-revealing finding was determined to be more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because it did not represent a loss of system function and did not represent an actual loss of function for two separate safety systems out-of-service for greater than its TS Allowed Outage Time. The finding had a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not provide work packages with sufficient detailed instructions to assure nuclear safety [H.2(c)]. (Section 4OA2.2)
Inspection Report# : 2012004 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Jun 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation

Failure to Adhere to Radiation Protection Procedures for Evacaution of the Unit 2 Upper Drywell in Preparation for Irradiated Component Moves
The inspectors identified a self-revealing finding of very low safety significance associated with failure to comply with Technical Specification (TS) 6.8 procedures. Specifically, the inspectors identified that the licensee failed to implement radiation protection procedure requirements associated with clearance of personnel from the upper levels of the Unit 2 Reactor Drywell in preparation for removal and movement of irradiated core component from the Unit 2 reactor vessel. The licensee entered this issue into their corrective action plan (CAP) (IR 1495585).

The failure to adhere to Technical Specification required radiation protection procedures for personnel exposure control for irradiated core component movement is a performance deficiency. The performance deficiency was determined to be more than minor because it was related to the Programs and Process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation from radioactive material during routine reactor operation. Further, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern if personnel were locked in the area and irradiated hardware dropped above their work location. The finding was not subject to traditional enforcement because it was not associated with a violation that impacted the regulatory process and did not contribute to actual safety consequences. The finding was assessed using IMC 0609, Appendix C, 2 Enclosure “Occupational Radiation Safety SDP,” , dated August 19, 2008, and was determined to be of very low safety significance (Green) because it was not related to As-Low-As-Is-Reasonably-Achievable (ALARA), did not result in an overexposure or a substantial potential for overexposure, and did not compromise the licensee's ability to assess dose. This finding was associated with the Work Control aspect of the Human Performance cross-cutting component. Specifically, the licensee did not effectively coordinate this work activity by incorporating actions to address the impact of the work on different job activities, and the need for work groups to maintain interfaces and communicate, coordinate, and cooperate with each other during activities in which interdepartmental coordination is necessary to assure plant and human performance (H.3 (b)). (Section 2RS1)

Inspection Report# : 2013003 *(pdf)*

Significance: N/A Oct 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Radiation Protection Procedures for Personnel Monitoring
NRC Letter, dated October 18, 2012 (ML12292A140), documented an NRC Office of Investigation review to determine whether a contract foreman deliberately failed to follow procedures on the use of electron dosimetry while at Limerick (NRC Investigation Report Number 1-2012-030). The NRC concluded that the contract foreman deliberately failed to follow an NRC-required procedure (RP-AA-1008) regarding the use of dosimetry and that the issue was being treated as an NCV. In order to facilitate entering this issue into the NRC’s Plant Issues Matrix and assessment process this issue is identified as NCV 05000352, 353/2012005-03, Failure to Follow Radiation Protection Procedures for Personnel Monitoring.
Inspection Report# : 2012005 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission

has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Nov 09, 2012
Identified By: NRC
Item Type: FIN Finding
Biennial PI&R inspection summary
The inspectors concluded that Exelon was generally effective in identifying, evaluating, and resolving problems. Exelon personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Exelon appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Exelon typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner. Notwithstanding, the inspectors identified one finding in the area of prioritization and evaluation of issues.

The inspectors concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to LGS operations. In addition, based on those items selected for review, the inspectors determined that Exelon's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2012010 *(pdf)*

Last modified : September 03, 2013

Limerick 2
3Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2013
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Follow Partial Procedure Change Process
A self-revealing Green finding of Technical Specification 6.8.1, “Administrative Controls-Procedures,” was identified because Exelon personnel did not implement procedure use and adherence requirements when operators changed the scope of work for surveillance testing of main turbine stop and control valves. This resulted in a reactor protection system automatic scram on April 16, 2013. This issue was identified in the Exelon CAP as IRs 1503749 and 1525552

The failure of station operators to follow the partial procedure performance process during the performance of two TS required surveillances was a performance deficiency that was reasonably within Exelon’s ability to foresee and correct and could have been prevented. The performance deficiency was also contrary to Exelon’s procedure use and adherence requirements. This finding was more than minor because, if improper implementation of the partial procedure performance process is left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern such as a more severe plant transient or engineered safeguard system actuation or malfunction. Additionally, this issue is similar to example 4.b in IMC 0612, Appendix E, “Examples of Minor Issues,” in that the procedural error resulted in a reactor scram or other transient. The finding was determined to be self-revealing because it was revealed through the receipt of a scram signal during performance of a surveillance test which required no active and deliberate observation by the licensee. The finding was determined to be of very low safety significance (Green) in accordance with Appendix G of IMC 0609, "Shutdown Operations Significance Determination Process,” because the finding did not require a quantitative assessment. A quantitative assessment was not required because the finding did not cause a loss of thermal margin, a loss of inventory, or degrade the ability to add inventory to the reactor coolant system.

This finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because Exelon did not ensure that personnel made safety-significant or risk significant decisions using a systematic process to ensure that safety is maintained [H.1(a)]. Specifically, the partial procedure performance process was not properly implemented which resulted in plant conditions that were improper for the next evolution. This resulted in a reactor protection system automatic scram on April 16, 2013. (Section 4OA3.1)

Inspection Report# : 2013003 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Technical Specification Surveillance Requirements on the Unit 2 Primary Containment

Instrument Gas System
The inspectors identified a Green NCV of Technical Specification (TS) 6.8.1.a, ”Procedures and Programs,” for Exelon’s failure to implement surveillance test procedures specified for the Primary Containment Instrument Gas (PCIG) system as required by Regulatory Guide (RG) 1.33, “Quality Assurance Program Requirements.” Specifically, Exelon’s PCIG local leak rate procedures, ST-4-LLR-011-2 and ST-4-LLR-241-2, incorrectly credited the surveillance testing of the PCIG supply header ‘B’ check primary containment isolation valve (059-2005B) in ST-6-059-201-2 “PCIG Valve Test” which resulted in entry into TS 4.0.3 for a missed surveillance. Exelon’s corrective actions included an extent of condition review and revising PCIG check valve surveillance testing to correct the crediting of the wrong check valves due to the successful completion of Local Leak Rate Testing (LLRT). Exelon has entered this issue into their CAP as IR 1554992 and 1569903.

The failure to perform the surveillance requirements specified for the PCIG system, specifically, incorrectly crediting the surveillance testing of PCIG check valve 059-2005B which resulted in a missed surveillance, is a performance deficiency. The performance deficiency was determined to be more than minor, because it adversely affected the Procedure Quality attribute of the Mitigating Systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Exelon failed to ensure that the PCIG system surveillance testing adequately tested and credited the successful completion of LLRT. The finding is of very low safety significance (Green) per IMC 0609, Appendix A, Exhibit 2 - “Mitigating Systems Screening Questions,” because the PCIG system was determined to maintain its operability and functionality, does not represent a loss of system and/or function and does not represent an actual loss of function of a single train for greater than its TS allowed outage time. The inspectors determined that the finding had a cross-cutting aspect in the area of PI&R, CAP, because Exelon did not thoroughly evaluate problems such that resolutions address causes and extent of conditions, including properly classifying, prioritizing, fully evaluated, and that actions are taken to address safety issues in a timely manner, commensurate with their safety significance [P.1(c)]. Specifically, Exelon personnel did not adequately address, thoroughly evaluate, and prioritize IR 1498740 which documented potential deficiencies with Unit 2 PCIG check valve testing, in a timely manner. (Section 1R13)

Inspection Report# : 2013004 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify and Correct a Condition Adverse to Quality Associated with Emergency Diesel Generator D24
The inspectors identified a Green non-cited violation (NCV) of 10 Code of Federal Regulation (CFR) 50, Appendix B, Criterion XVI, “Corrective Action”, because Exelon personnel did not identify and correct a condition adverse to quality associated with emergency diesel generator (EDG) D24 lubricating oil pipe fitting supports. This resulted in EDG D24 being in a degraded condition from November 2012 until the condition was corrected in May 2013. Exelon personnel entered this issue into the CAP as IRs 1507365, 1509125, 1511869, 1512745, 1526780, and 1528088.

The failure of Exelon personnel to identify and correct the degraded instrument line clamp and insert on EDG D24’s lubricating oil supply pressure sensing line following the failure of a pipe fitting on November 13, 2012 is a performance deficiency that was reasonably within Exelon’s ability to foresee and correct. The issue report (IR) written to document the issue (IR 1439284) was inappropriately classified as not a Critical Component Failure. This resulted in the issue receiving a lower level of investigation (work group evaluation versus an apparent cause or root cause evaluation). This NRC-identified finding was more than minor because it is associated with equipment performance and affected the Mitigating System cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating event to prevent undesirable consequences. The inspectors evaluated the finding using Appendix A, “The Significance Determination Process for Findings At-Power,” to IMC 0609, “Significance Determination Process.” Exelon personnel conducted vibration tested which determined that the pipe

fitting crack initiation and propagation occurred during engine slow start speed acceleration. This was based vibration data which showed two vibration peaks at speeds during the acceleration. Also, the crack did not propagate during normal speed operation based on the fact that the leak size did not increased during monthly testing on April 27, 2013. The inspectors determined this finding did not represent an actual loss of function of a single train for greater than it Technical Specification Allowed Outage Time. Therefore, the inspectors determined the finding to be of very low safety significance (Green).

This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon personnel did not thoroughly evaluate the cause of the November 12, 2012 lubricating oil system pipe fitting crack such that the resolutions address causes and extent of conditions [P.1(c)]. Specifically, although failure analysis determined that the cause of the pipe fitting failure was due to high cycle fatigue a thorough investigation into all potential causes (e.g., excessive vibrations, missing pipe support) was not performed. This resulted in EDG D24 being inoperable for greater than the TS allowed outage time from November 13, 2012 until the condition was corrected on May 12, 2013. (Section 1R15)

Inspection Report# : 2013003 *(pdf)*

Significance: G May 24, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Fire Brigade Transportation
The NRC identified a Green, Non-Cited Violation (NCV) of License Condition 2.C.(3) of the Limerick Generating Station operating license, in that Exelon did not provide adequate procedural guidance for transporting the fire brigade and equipment to the spray pond pump house. Specifically, the existing fire procedure had incorrect guidance which would have needlessly delayed the fire brigade response. In response to this issue, Exelon initiated IR 1511763 and took prompt action to revise the affected procedures.

The finding was more than minor because it negatively affected the protection against external factors (fire) attribute of the mitigating systems cornerstone as related to the objective of ensuring the reliability and availability of the Essential Service Water pumps and Residual Heat Removal Service Water pumps. The finding was determined to be of very low safety significance (Green) in accordance with Section D of Exhibit 2 in Appendix A of IMC 0609, "The Significance Determination Process for Findings at Power," because the fire brigade's response time was mitigated by other defense-indepth elements such as: area combustible loading limits were not exceeded, installed fire detection systems were functional, and alternate means of safe shutdown were not impacted. The finding did not have a cross-cutting aspect because it was not indicative of current performance. (Section 1R05.03)
Inspection Report# : 2013007 *(pdf)*

Significance: G May 24, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Establish Preventive Maintenance for Safe Shutdown Transfer/Isolation Switches
The NRC identified a Green finding for the failure to establish a preventive maintenance strategy for fire safe shutdown transfer/isolation switches in accordance with the Exelon procedure ER-AA-200, Preventive Maintenance Program. As a result,

Exelon failed to ensure that the local control circuits for several 4KV breakers would be isolated from the effects of fire damage. In response to this issue, Exelon generated IR 01515025, and initiated actions to evaluate the switches and implement appropriate maintenance programs.

This finding was more than minor because it was associated with the protection against external factors (fire) attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, by failing to establish a preventive maintenance strategy for fire safe shutdown transfer/isolation switches, Exelon did not ensure that the local control circuits for several 4KV breakers would be isolated from the effects of fire damage. The team determined that the finding was of very low safety significance (Green), based on IMC 0609, Appendix F, "Fire Protection Significance Determination Process," task number 1.3.1 because Exelon had demonstrated a reasonable expectation of functionality for these switches by recently testing comparable switches. The finding did not have a crosscutting aspect because it was not indicative of current performance. (Section 1R05.06)
Inspection Report# : 2013007 *(pdf)*

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Revise EDG Tank Cleaning Work Instructions
A self-revealing Green NCV of Technical Specification 6.8.1, "Administrative Controls-Procedures," was identified because Exelon did not implement procedure use and adherence requirements when workers changed the scope of work on EDG fuel oil day tanks and did not revise the work instructions when they determined that work could not be performed as written. This resulted in EDG D13 accruing approximately 40 hours of unplanned unavailability between December 14 and 16, 2012.

This finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be self-revealing because it was revealed through the receipt of alarms during operation which required no active and deliberate observation by the licensee. The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," because the finding did not represent an actual loss of function a single train for greater than the TS allowed outage time.

This finding had a cross-cutting aspect in the area of Human Performance, Work Practices, because Exelon did not ensure that personnel followed procedures [H.4(b)]. Specifically, work order procedural steps to clean the fuel oil tank were not completed and a procedurally required change to written work instructions was not implemented when station personnel determined that the fuel oil tank cleaning would be based on the need to clean the tank as determined by tank inspection results. (Section 1R19)

Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 31, 2012
Identified By: NRC
Item Type: FIN Finding

Failure to Administer an NRC Annual Operating Test Simulator Scenario Re-examination That Met Procedural Requirements
The inspectors identified a Green finding of of Exelon procedure TQ-AA-150, “Operator Training Programs,” and TQ-AA-155, “Conduct of Simulator Training and Evaluation,” based on a determination that the minimum number of scenarios required for simulator re-examination was not administered following a crew failure of the dynamic simulator scenario portion of the annual operating exam during week two of the 2012 Licensed Operator Requalification Training (LORT) Annual Operating Test. The Exelon entered this finding into their corrective action process (IR 1437839), conducted a prompt investigation (PINV), assigned an action to complete the annual operating exam scenario set for the crew in question, and initiated an Apparent Cause Evaluation.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the Mitigation Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The risk importance of this issue was evaluated using IMC 0609, Appendix I, “Licensed Operator Requalification Significance Determination Process (SDP).” Based on this screening criteria, the finding (inadequate retest) was characterized by the SDP as having very low safety significance (Green) because crew remediation was conducted and a partial re-evaluation performed. The finding has a cross-cutting aspect in the area of Human Performance, Work Practices, H.4(b), in that personnel work practices did not support human performance since personnel did not follow their procedural requirements to determine and ensure that simulator scenario re-exam administered following a failed Annual Operating Test was commensurate with the original exam failure.

FIN 05000352, 353/2012005-01, Failure to Administer an NRC Annual Operating Test Simulator Scenario Re-examination That Met Procedural Requirements

Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Evaluation of Voltage to Safety-Related Equipment with Offsite Power Available
The team identified a non-cited violation of Title 10 of the Code of Federat Regutations (10 CFR) Part 50, Appendix B, Criterion lll, "Design Control," which states, in part, "design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program." The team determined that Exelon did not verify that adequate voltages would be available to safetyrelated equipment powered from the 4kV, 480vac, and 120Yac distribution systems during a design basis loss-of-coolant accident with offsite power available. Specifically, the team found that Exelon assumed a non-conservative offsite power voltage at the start of the event, used a non-conservative assumption for motor starting times, and did not have calculations that determined the minimum voltage level for the 480 Vac and 120Yac distribution level during post event electrical transients. Following questions from the team Exelon entered the issue into their corrective action program, revised existing calculations, performed new calculations, and completed evaluations to ensure that the minimum voltage level that would be reached during an event would be adequate at all three voltage levels. The team reviewed these calculations and evaluations and concluded the results of the work performed during the inspection were reasonable.

The team determined that the failure to verify adequate voltages at all voltage levels to safety-related equipment during a design basis loss-of-coolant accident was a

performance deficiency. This issue was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor lssues," Example 3.j, in that the design analysis deficiency resutted in a condition where the team had reasonable doubt of operability of the safety-related busses. In addition, it was associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design or qualificalion deficiency confirmed not to result in loss of operability or functionality. This finding had a crosscutting aspect in the area of Human Performance, Resources, because Exelon did not provide complete, accurate and up-to-date design documentation to plant personnel and because these calculations had been recently revised. (lMC 0310, H.2(c)) (Section 1R21.2.1.1 5.1)
Inspection Report# : 2012007 *(pdf)*

Significance: G Dec 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
480V Motor Control Circuit Breaker Overcurrent Protection
The team identified a finding of very low safety significance (Green) involving a non-cited violation of Limerick Generating Station License Condition 2.C.(3), "Fire Protection," which states Exelon Generation Company shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the UFSAR. Specifically, the team found that Exelon's multiple high impedance fault (MHIF)analysis, developed to verify that post-fire safe shutdown equipment would remain available, used non-conservative overcurrent trip setpoints for 480 volt overcurrent protection devices. Specifically, the team found that molded case circuit breaker overcurrent protection did not protect against all possible faults currents that could be present on downstream equipment. "As a result, fault current greater than that assumed in the MHIF analysis could propagate past the circuit breaker and trip upstream equipment. Exelon entered the issue into their corrective action program and performed an analysis that showed credited equipment would be available. The team concluded the results of the work performed were reasonable.

The team determined that Exelon's selection of breaker trip values for use in the MHIF analysis was non-conservative and was a performance deficiency. Specifically, the post-fire safe shutdown MHIF analysis did not use worst case or maximum fault current to verify that fire induced fault currents that propagated past branch feeder circuit breakers would not cause the motor control center source breaker to overload and trip. This issue was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor lssues," Example 3.j, in that the design analysis deficiency resulted in a condition where the team had reasonable doubt of operability of the MCC during a fire. In addition, this issue was associated with the Fire Protection attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because the finding affected the post-fire safe shutdown category and it had a low degradation rating. This finding did not have a cross-cutting aspect because the design requirements of the breakers had not changed from initial startup and therefore it does not reflect current licensee performance. (Section 1R21.2.1.15.2)

Inspection Report# : 2012007 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Jun 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Adhere to Radiation Protection Procedures for Evacaution of the Unit 2 Upper Drywell in Preparation for Irradiated Component Moves
The inspectors identified a self-revealing finding of very low safety significance associated with failure to comply with Technical Specification (TS) 6.8 procedures. Specifically, the inspectors identified that the licensee failed to implement radiation protection procedure requirements associated with clearance of personnel from the upper levels of the Unit 2 Reactor Drywell in preparation for removal and movement of irradiated core component from the Unit 2 reactor vessel. The licensee entered this issue into their corrective action plan (CAP) (IR 1495585).

The failure to adhere to Technical Specification required radiation protection procedures for personnel exposure control for irradiated core component movement is a performance deficiency. The performance deficiency was determined to be more than minor because it was related to the Programs and Process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation from radioactive material during routine reactor operation. Further, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern if personnel were locked in the area and irradiated hardware dropped above their work location. The finding was not subject to traditional enforcement because it was not associated with a violation that impacted the regulatory process and did not contribute to actual safety consequences. The finding was assessed using IMC 0609, Appendix C, 2 Enclosure “Occupational Radiation Safety SDP,” , dated August 19, 2008, and was determined to be of very low safety significance (Green) because it was not related to As-Low-As-Is-Reasonably-Achievable (ALARA), did not result in an overexposure or a substantial potential for overexposure, and did not compromise the licensee's ability to assess dose. This finding was associated with the Work Control aspect of the Human Performance cross-cutting component. Specifically, the licensee did not effectively coordinate this work activity by incorporating actions to address the impact of the work on different job activities, and the need for work groups to maintain interfaces and communicate, coordinate, and cooperate with each other during activities in which interdepartmental coordination is necessary to assure plant and human performance (H.3 (b)). (Section 2RS1)

Inspection Report# : 2013003 *(pdf)*

Significance: N/A Oct 18, 2012
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Follow Radiation Protection Procedures for Personnel Monitoring
NRC Letter, dated October 18, 2012 (ML12292A140), documented an NRC Office of Investigation review to determine whether a contract foreman deliberately failed to follow procedures on the use of electron dosimetry while at Limerick (NRC Investigation Report Number 1-2012-030). The NRC concluded that the contract foreman deliberately failed to follow an NRC-required procedure (RP-AA-1008) regarding the use of dosimetry and that the issue was being treated as an NCV. In order to facilitate entering this issue into the NRC's Plant Issues Matrix and assessment process this issue is identified as NCV 05000352, 353/2012005-03, Failure to Follow Radiation Protection Procedures for Personnel Monitoring.
Inspection Report# : 2012005 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Nov 09, 2012
Identified By: NRC
Item Type: FIN Finding
Biennial PI&R inspection summary
The inspectors concluded that Exelon was generally effective in identifying, evaluating, and resolving problems. Exelon personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, Exelon appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that Exelon typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner. Notwithstanding, the inspectors identified one finding in the area of prioritization and evaluation of issues.

The inspectors concluded that, in general, Exelon adequately identified, reviewed, and applied relevant industry operating experience to LGS operations. In addition, based on those items selected for review, the inspectors determined that Exelon's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Inspection Report# : 2012010 *(pdf)*

Last modified : December 03, 2013

Limerick 2
4Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2013
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Follow Partial Procedure Change Process
A self-revealing Green finding of Technical Specification 6.8.1, “Administrative Controls-Procedures,” was identified because Exelon personnel did not implement procedure use and adherence requirements when operators changed the scope of work for surveillance testing of main turbine stop and control valves. This resulted in a reactor protection system automatic scram on April 16, 2013. This issue was identified in the Exelon CAP as IRs 1503749 and 1525552

The failure of station operators to follow the partial procedure performance process during the performance of two TS required surveillances was a performance deficiency that was reasonably within Exelon’s ability to foresee and correct and could have been prevented. The performance deficiency was also contrary to Exelon’s procedure use and adherence requirements. This finding was more than minor because, if improper implementation of the partial procedure performance process is left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern such as a more severe plant transient or engineered safeguard system actuation or malfunction. Additionally, this issue is similar to example 4.b in IMC 0612, Appendix E, “Examples of Minor Issues,” in that the procedural error resulted in a reactor scram or other transient. The finding was determined to be self-revealing because it was revealed through the receipt of a scram signal during performance of a surveillance test which required no active and deliberate observation by the licensee. The finding was determined to be of very low safety significance (Green) in accordance with Appendix G of IMC 0609, "Shutdown Operations Significance Determination Process,” because the finding did not require a quantitative assessment. A quantitative assessment was not required because the finding did not cause a loss of thermal margin, a loss of inventory, or degrade the ability to add inventory to the reactor coolant system.

This finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because Exelon did not ensure that personnel made safety-significant or risk significant decisions using a systematic process to ensure that safety is maintained [H.1(a)]. Specifically, the partial procedure performance process was not properly implemented which resulted in plant conditions that were improper for the next evolution. This resulted in a reactor protection system automatic scram on April 16, 2013. (Section 4OA3.1)

Inspection Report# : 2013003 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Technical Specification Surveillance Requirements on the Unit 2 Primary Containment

Instrument Gas System
The inspectors identified a Green NCV of Technical Specification (TS) 6.8.1.a, ”Procedures and Programs,” for Exelon’s failure to implement surveillance test procedures specified for the Primary Containment Instrument Gas (PCIG) system as required by Regulatory Guide (RG) 1.33, “Quality Assurance Program Requirements.” Specifically, Exelon’s PCIG local leak rate procedures, ST-4-LLR-011-2 and ST-4-LLR-241-2, incorrectly credited the surveillance testing of the PCIG supply header ‘B’ check primary containment isolation valve (059-2005B) in ST-6-059-201-2 “PCIG Valve Test” which resulted in entry into TS 4.0.3 for a missed surveillance. Exelon’s corrective actions included an extent of condition review and revising PCIG check valve surveillance testing to correct the crediting of the wrong check valves due to the successful completion of Local Leak Rate Testing (LLRT). Exelon has entered this issue into their CAP as IR 1554992 and 1569903.

The failure to perform the surveillance requirements specified for the PCIG system, specifically, incorrectly crediting the surveillance testing of PCIG check valve 059-2005B which resulted in a missed surveillance, is a performance deficiency. The performance deficiency was determined to be more than minor, because it adversely affected the Procedure Quality attribute of the Mitigating Systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Exelon failed to ensure that the PCIG system surveillance testing adequately tested and credited the successful completion of LLRT. The finding is of very low safety significance (Green) per IMC 0609, Appendix A, Exhibit 2 - “Mitigating Systems Screening Questions,” because the PCIG system was determined to maintain its operability and functionality, does not represent a loss of system and/or function and does not represent an actual loss of function of a single train for greater than its TS allowed outage time. The inspectors determined that the finding had a cross-cutting aspect in the area of PI&R, CAP, because Exelon did not thoroughly evaluate problems such that resolutions address causes and extent of conditions, including properly classifying, prioritizing, fully evaluated, and that actions are taken to address safety issues in a timely manner, commensurate with their safety significance [P.1(c)]. Specifically, Exelon personnel did not adequately address, thoroughly evaluate, and prioritize IR 1498740 which documented potential deficiencies with Unit 2 PCIG check valve testing, in a timely manner. (Section 1R13)

Inspection Report# : 2013004 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify and Correct a Condition Adverse to Quality Associated with Emergency Diesel Generator D24
The inspectors identified a Green non-cited violation (NCV) of 10 Code of Federal Regulation (CFR) 50, Appendix B, Criterion XVI, “Corrective Action”, because Exelon personnel did not identify and correct a condition adverse to quality associated with emergency diesel generator (EDG) D24 lubricating oil pipe fitting supports. This resulted in EDG D24 being in a degraded condition from November 2012 until the condition was corrected in May 2013. Exelon personnel entered this issue into the CAP as IRs 1507365, 1509125, 1511869, 1512745, 1526780, and 1528088.

The failure of Exelon personnel to identify and correct the degraded instrument line clamp and insert on EDG D24’s lubricating oil supply pressure sensing line following the failure of a pipe fitting on November 13, 2012 is a performance deficiency that was reasonably within Exelon’s ability to foresee and correct. The issue report (IR) written to document the issue (IR 1439284) was inappropriately classified as not a Critical Component Failure. This resulted in the issue receiving a lower level of investigation (work group evaluation versus an apparent cause or root cause evaluation). This NRC-identified finding was more than minor because it is associated with equipment performance and affected the Mitigating System cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating event to prevent undesirable consequences. The inspectors evaluated the finding using Appendix A, “The Significance Determination Process for Findings At-Power,” to IMC 0609, “Significance Determination Process.” Exelon personnel conducted vibration tested which determined that the pipe

fitting crack initiation and propagation occurred during engine slow start speed acceleration. This was based vibration data which showed two vibration peaks at speeds during the acceleration. Also, the crack did not propagate during normal speed operation based on the fact that the leak size did not increased during monthly testing on April 27, 2013. The inspectors determined this finding did not represent an actual loss of function of a single train for greater than it Technical Specification Allowed Outage Time. Therefore, the inspectors determined the finding to be of very low safety significance (Green).

This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon personnel did not thoroughly evaluate the cause of the November 12, 2012 lubricating oil system pipe fitting crack such that the resolutions address causes and extent of conditions [P.1(c)]. Specifically, although failure analysis determined that the cause of the pipe fitting failure was due to high cycle fatigue a thorough investigation into all potential causes (e.g., excessive vibrations, missing pipe support) was not performed. This resulted in EDG D24 being inoperable for greater than the TS allowed outage time from November 13, 2012 until the condition was corrected on May 12, 2013. (Section 1R15)

Inspection Report# : 2013003 *(pdf)*

Significance: G May 24, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Fire Brigade Transportation
The NRC identified a Green, Non-Cited Violation (NCV) of License Condition 2.C.(3) of the Limerick Generating Station operating license, in that Exelon did not provide adequate procedural guidance for transporting the fire brigade and equipment to the spray pond pump house. Specifically, the existing fire procedure had incorrect guidance which would have needlessly delayed the fire brigade response. In response to this issue, Exelon initiated IR 1511763 and took prompt action to revise the affected procedures.

The finding was more than minor because it negatively affected the protection against external factors (fire) attribute of the mitigating systems cornerstone as related to the objective of ensuring the reliability and availability of the Essential Service Water pumps and Residual Heat Removal Service Water pumps. The finding was determined to be of very low safety significance (Green) in accordance with Section D of Exhibit 2 in Appendix A of IMC 0609, "The Significance Determination Process for Findings at Power," because the fire brigade's response time was mitigated by other defense-indepth elements such as: area combustible loading limits were not exceeded, installed fire detection systems were functional, and alternate means of safe shutdown were not impacted. The finding did not have a cross-cutting aspect because it was not indicative of current performance. (Section 1R05.03)
Inspection Report# : 2013007 *(pdf)*

Significance: G May 24, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Establish Preventive Maintenance for Safe Shutdown Transfer/Isolation Switches
The NRC identified a Green finding for the failure to establish a preventive maintenance strategy for fire safe shutdown transfer/isolation switches in accordance with the Exelon procedure ER-AA-200, Preventive Maintenance Program. As a result,

Exelon failed to ensure that the local control circuits for several 4KV breakers would be isolated from the effects of fire damage. In response to this issue, Exelon generated IR 01515025, and initiated actions to evaluate the switches and implement appropriate maintenance programs.

This finding was more than minor because it was associated with the protection against external factors (fire) attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, by failing to establish a preventive maintenance strategy for fire safe shutdown transfer/isolation switches, Exelon did not ensure that the local control circuits for several 4KV breakers would be isolated from the effects of fire damage. The team determined that the finding was of very low safety significance (Green), based on IMC 0609, Appendix F, “Fire Protection Significance Determination Process,” task number 1.3.1 because Exelon had demonstrated a reasonable expectation of functionality for these switches by recently testing comparable switches. The finding did not have a crosscutting aspect because it was not indicative of current performance. (Section 1R05.06)
Inspection Report# : 2013007 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Properly Plan Work for Failed Airlock Door Magnetic Switch
The inspectors identified a self-revealing finding (FIN) of very low safety significance (Green) was identified for Exelon’s failure to appropriately prioritize work activities associated with a degraded Unit 2 magnetic switch for a secondary containment airlock door in accordance with Exelon procedure WC-AA-106, “Work Screening and Processing.” This contributed to multiple airlock doors being opened simultaneously and resulted in a loss of reactor enclosure secondary containment integrity.

The failure of the station to properly prioritize the work order for the defective magnetic switch for the Unit 2 313’ elevation reactor building-to-reactor building air supply room access airlock doors was a performance deficiency that was reasonably within Exelon’s ability to foresee and correct and could have been prevented. This was caused by not performing a site impact review of reportability clarifications made by NUREG 1022, “Event Report Guidelines 10 CFR 50.72 and 50.73,” Revision 3. The performance deficiency was also contrary to Exelon’s procedure for work screening and processing. The finding was determined to be more than minor because it was associated with the Barrier Integrity cornerstone attribute of SSC and Barrier Performance (doors and instrumentation) and affected the cornerstone objective of providing reasonable assurance that physical design barriers (secondary containment) protect the public from radionuclide releases caused by accidents or events. Specifically, opening two reactor building airlock doors at the same time did not maintain reasonable assurance that the secondary containment would be capable of performing its safety function in the event of a reactor accident. The finding was determined to be self-revealing because it was revealed through the receipt of an alarm in the main control room which required no active and deliberate observation by Exelon personnel. The finding was determined to be of very low safety significance (Green) in accordance with Appendix A of IMC 0609, "Significance Determination Process (SDP) for Findings At-Power." Specifically, the finding only represents a degradation of the radiological barrier function provided for the SBGT system. Exelon entered the issue into the CAP as IR 1553563. Corrective actions performed or planned included

repairing the magnetic switch, verifying that the corrective maintenance backlog did not contain any other issues involving the airlock door indicating lights, developing a periodic routine test of the airlock door indicating circuits, and performing a site impact review of the changes make by NUREG 1022, Revision 3.

This finding had a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure that resources were available to minimize preventative maintenance deferrals and ensure maintenance and engineering backlogs were low enough to ensure that safety is maintained [H.2(a)]. Specifically, Exelon deferred implementation of the work order several times over a three year period which resulted in secondary containment becoming inoperable on September 3, 2013.

Inspection Report# : 2013005 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Jun 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Adhere to Radiation Protection Procedures for Evacaution of the Unit 2 Upper Drywell in Preparation for Irradiated Component Moves
The inspectors identified a self-revealing finding of very low safety significance associated with failure to comply with Technical Specification (TS) 6.8 procedures. Specifically, the inspectors identified that the licensee failed to implement radiation protection procedure requirements associated with clearance of personnel from the upper levels of the Unit 2 Reactor Drywell in preparation for removal and movement of irradiated core component from the Unit 2 reactor vessel. The licensee entered this issue into their corrective action plan (CAP) (IR 1495585).

The failure to adhere to Technical Specification required radiation protection procedures for personnel exposure control for irradiated core component movement is a performance deficiency. The performance deficiency was determined to be more than minor because it was related to the Programs and Process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation from radioactive material during routine reactor operation. Further, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern if personnel were locked in the area and irradiated hardware dropped above their work location. The finding was not subject to traditional enforcement because it was not associated with a violation that impacted the regulatory process and did not contribute to actual safety consequences. The finding was assessed using IMC 0609, Appendix C, 2 Enclosure “Occupational Radiation Safety SDP,” , dated August 19, 2008, and was determined to be of very low safety significance (Green) because it was not related to As-Low-As-Is-Reasonably-Achievable (ALARA), did not result in an overexposure or a substantial potential for overexposure, and did not compromise the licensee's ability to assess dose. This finding was associated with the Work Control aspect of the Human Performance cross-cutting component. Specifically, the licensee did not effectively coordinate this work activity by incorporating actions to address the impact of the work on different job activities, and the need for work groups to maintain interfaces and communicate, coordinate, and cooperate with each other during activities in which interdepartmental coordination is necessary to assure plant and human performance (H.3 (b)). (Section 2RS1)

Inspection Report# : 2013003 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : February 24, 2014

Limerick 2
1Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2013
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Follow Partial Procedure Change Process
A self-revealing Green finding of Technical Specification 6.8.1, “Administrative Controls-Procedures,” was identified because Exelon personnel did not implement procedure use and adherence requirements when operators changed the scope of work for surveillance testing of main turbine stop and control valves. This resulted in a reactor protection system automatic scram on April 16, 2013. This issue was identified in the Exelon CAP as IRs 1503749 and 1525552

The failure of station operators to follow the partial procedure performance process during the performance of two TS required surveillances was a performance deficiency that was reasonably within Exelon’s ability to foresee and correct and could have been prevented. The performance deficiency was also contrary to Exelon’s procedure use and adherence requirements. This finding was more than minor because, if improper implementation of the partial procedure performance process is left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern such as a more severe plant transient or engineered safeguard system actuation or malfunction. Additionally, this issue is similar to example 4.b in IMC 0612, Appendix E, “Examples of Minor Issues,” in that the procedural error resulted in a reactor scram or other transient. The finding was determined to be self-revealing because it was revealed through the receipt of a scram signal during performance of a surveillance test which required no active and deliberate observation by the licensee. The finding was determined to be of very low safety significance (Green) in accordance with Appendix G of IMC 0609, "Shutdown Operations Significance Determination Process,” because the finding did not require a quantitative assessment. A quantitative assessment was not required because the finding did not cause a loss of thermal margin, a loss of inventory, or degrade the ability to add inventory to the reactor coolant system.

This finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because Exelon did not ensure that personnel made safety-significant or risk significant decisions using a systematic process to ensure that safety is maintained [H.1(a)]. Specifically, the partial procedure performance process was not properly implemented which resulted in plant conditions that were improper for the next evolution. This resulted in a reactor protection system automatic scram on April 16, 2013. (Section 4OA3.1)

Inspection Report# : 2013003 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Technical Specification Surveillance Requirements on the Unit 2 Primary Containment

Instrument Gas System
The inspectors identified a Green NCV of Technical Specification (TS) 6.8.1.a, ”Procedures and Programs,” for Exelon’s failure to implement surveillance test procedures specified for the Primary Containment Instrument Gas (PCIG) system as required by Regulatory Guide (RG) 1.33, “Quality Assurance Program Requirements.” Specifically, Exelon’s PCIG local leak rate procedures, ST-4-LLR-011-2 and ST-4-LLR-241-2, incorrectly credited the surveillance testing of the PCIG supply header ‘B’ check primary containment isolation valve (059-2005B) in ST-6-059-201-2 “PCIG Valve Test” which resulted in entry into TS 4.0.3 for a missed surveillance. Exelon’s corrective actions included an extent of condition review and revising PCIG check valve surveillance testing to correct the crediting of the wrong check valves due to the successful completion of Local Leak Rate Testing (LLRT). Exelon has entered this issue into their CAP as IR 1554992 and 1569903.

The failure to perform the surveillance requirements specified for the PCIG system, specifically, incorrectly crediting the surveillance testing of PCIG check valve 059-2005B which resulted in a missed surveillance, is a performance deficiency. The performance deficiency was determined to be more than minor, because it adversely affected the Procedure Quality attribute of the Mitigating Systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Exelon failed to ensure that the PCIG system surveillance testing adequately tested and credited the successful completion of LLRT. The finding is of very low safety significance (Green) per IMC 0609, Appendix A, Exhibit 2 - “Mitigating Systems Screening Questions,” because the PCIG system was determined to maintain its operability and functionality, does not represent a loss of system and/or function and does not represent an actual loss of function of a single train for greater than its TS allowed outage time. The inspectors determined that the finding had a cross-cutting aspect in the area of PI&R, CAP, because Exelon did not thoroughly evaluate problems such that resolutions address causes and extent of conditions, including properly classifying, prioritizing, fully evaluated, and that actions are taken to address safety issues in a timely manner, commensurate with their safety significance [P.1(c)]. Specifically, Exelon personnel did not adequately address, thoroughly evaluate, and prioritize IR 1498740 which documented potential deficiencies with Unit 2 PCIG check valve testing, in a timely manner. (Section 1R13)

Inspection Report# : 2013004 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify and Correct a Condition Adverse to Quality Associated with Emergency Diesel Generator D24
The inspectors identified a Green non-cited violation (NCV) of 10 Code of Federal Regulation (CFR) 50, Appendix B, Criterion XVI, “Corrective Action”, because Exelon personnel did not identify and correct a condition adverse to quality associated with emergency diesel generator (EDG) D24 lubricating oil pipe fitting supports. This resulted in EDG D24 being in a degraded condition from November 2012 until the condition was corrected in May 2013. Exelon personnel entered this issue into the CAP as IRs 1507365, 1509125, 1511869, 1512745, 1526780, and 1528088.

The failure of Exelon personnel to identify and correct the degraded instrument line clamp and insert on EDG D24’s lubricating oil supply pressure sensing line following the failure of a pipe fitting on November 13, 2012 is a performance deficiency that was reasonably within Exelon’s ability to foresee and correct. The issue report (IR) written to document the issue (IR 1439284) was inappropriately classified as not a Critical Component Failure. This resulted in the issue receiving a lower level of investigation (work group evaluation versus an apparent cause or root cause evaluation). This NRC-identified finding was more than minor because it is associated with equipment performance and affected the Mitigating System cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating event to prevent undesirable consequences. The inspectors evaluated the finding using Appendix A, “The Significance Determination Process for Findings At-Power,” to IMC 0609, “Significance Determination Process.” Exelon personnel conducted vibration tested which determined that the pipe

fitting crack initiation and propagation occurred during engine slow start speed acceleration. This was based vibration data which showed two vibration peaks at speeds during the acceleration. Also, the crack did not propagate during normal speed operation based on the fact that the leak size did not increased during monthly testing on April 27, 2013. The inspectors determined this finding did not represent an actual loss of function of a single train for greater than it Technical Specification Allowed Outage Time. Therefore, the inspectors determined the finding to be of very low safety significance (Green).

This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon personnel did not thoroughly evaluate the cause of the November 12, 2012 lubricating oil system pipe fitting crack such that the resolutions address causes and extent of conditions [P.1(c)]. Specifically, although failure analysis determined that the cause of the pipe fitting failure was due to high cycle fatigue a thorough investigation into all potential causes (e.g., excessive vibrations, missing pipe support) was not performed. This resulted in EDG D24 being inoperable for greater than the TS allowed outage time from November 13, 2012 until the condition was corrected on May 12, 2013. (Section 1R15)

Inspection Report# : 2013003 *(pdf)*

Significance: G May 24, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Fire Brigade Transportation
The NRC identified a Green, Non-Cited Violation (NCV) of License Condition 2.C.(3) of the Limerick Generating Station operating license, in that Exelon did not provide adequate procedural guidance for transporting the fire brigade and equipment to the spray pond pump house. Specifically, the existing fire procedure had incorrect guidance which would have needlessly delayed the fire brigade response. In response to this issue, Exelon initiated IR 1511763 and took prompt action to revise the affected procedures.

The finding was more than minor because it negatively affected the protection against external factors (fire) attribute of the mitigating systems cornerstone as related to the objective of ensuring the reliability and availability of the Essential Service Water pumps and Residual Heat Removal Service Water pumps. The finding was determined to be of very low safety significance (Green) in accordance with Section D of Exhibit 2 in Appendix A of IMC 0609, "The Significance Determination Process for Findings at Power," because the fire brigade's response time was mitigated by other defense-indepth elements such as: area combustible loading limits were not exceeded, installed fire detection systems were functional, and alternate means of safe shutdown were not impacted. The finding did not have a cross-cutting aspect because it was not indicative of current performance. (Section 1R05.03)
Inspection Report# : 2013007 *(pdf)*

Significance: G May 24, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Establish Preventive Maintenance for Safe Shutdown Transfer/Isolation Switches
The NRC identified a Green finding for the failure to establish a preventive maintenance strategy for fire safe shutdown transfer/isolation switches in accordance with the Exelon procedure ER-AA-200, Preventive Maintenance Program. As a result,

Exelon failed to ensure that the local control circuits for several 4KV breakers would be isolated from the effects of fire damage. In response to this issue, Exelon generated IR 01515025, and initiated actions to evaluate the switches and implement appropriate maintenance programs.

This finding was more than minor because it was associated with the protection against external factors (fire) attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, by failing to establish a preventive maintenance strategy for fire safe shutdown transfer/isolation switches, Exelon did not ensure that the local control circuits for several 4KV breakers would be isolated from the effects of fire damage. The team determined that the finding was of very low safety significance (Green), based on IMC 0609, Appendix F, “Fire Protection Significance Determination Process,” task number 1.3.1 because Exelon had demonstrated a reasonable expectation of functionality for these switches by recently testing comparable switches. The finding did not have a crosscutting aspect because it was not indicative of current performance. (Section 1R05.06)
Inspection Report# : 2013007 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Properly Plan Work for Failed Airlock Door Magnetic Switch
The inspectors identified a self-revealing finding (FIN) of very low safety significance (Green) was identified for Exelon’s failure to appropriately prioritize work activities associated with a degraded Unit 2 magnetic switch for a secondary containment airlock door in accordance with Exelon procedure WC-AA-106, “Work Screening and Processing.” This contributed to multiple airlock doors being opened simultaneously and resulted in a loss of reactor enclosure secondary containment integrity.

The failure of the station to properly prioritize the work order for the defective magnetic switch for the Unit 2 313’ elevation reactor building-to-reactor building air supply room access airlock doors was a performance deficiency that was reasonably within Exelon’s ability to foresee and correct and could have been prevented. This was caused by not performing a site impact review of reportability clarifications made by NUREG 1022, “Event Report Guidelines 10 CFR 50.72 and 50.73,” Revision 3. The performance deficiency was also contrary to Exelon’s procedure for work screening and processing. The finding was determined to be more than minor because it was associated with the Barrier Integrity cornerstone attribute of SSC and Barrier Performance (doors and instrumentation) and affected the cornerstone objective of providing reasonable assurance that physical design barriers (secondary containment) protect the public from radionuclide releases caused by accidents or events. Specifically, opening two reactor building airlock doors at the same time did not maintain reasonable assurance that the secondary containment would be capable of performing its safety function in the event of a reactor accident. The finding was determined to be self-revealing because it was revealed through the receipt of an alarm in the main control room which required no active and deliberate observation by Exelon personnel. The finding was determined to be of very low safety significance (Green) in accordance with Appendix A of IMC 0609, "Significance Determination Process (SDP) for Findings At-Power." Specifically, the finding only represents a degradation of the radiological barrier function provided for the SBGT system. Exelon entered the issue into the CAP as IR 1553563. Corrective actions performed or planned included

repairing the magnetic switch, verifying that the corrective maintenance backlog did not contain any other issues involving the airlock door indicating lights, developing a periodic routine test of the airlock door indicating circuits, and performing a site impact review of the changes make by NUREG 1022, Revision 3.

This finding had a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure that resources were available to minimize preventative maintenance deferrals and ensure maintenance and engineering backlogs were low enough to ensure that safety is maintained [H.2(a)]. Specifically, Exelon deferred implementation of the work order several times over a three year period which resulted in secondary containment becoming inoperable on September 3, 2013.

Inspection Report# : 2013005 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Jun 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Adhere to Radiation Protection Procedures for Evacaution of the Unit 2 Upper Drywell in Preparation for Irradiated Component Moves
The inspectors identified a self-revealing finding of very low safety significance associated with failure to comply with Technical Specification (TS) 6.8 procedures. Specifically, the inspectors identified that the licensee failed to implement radiation protection procedure requirements associated with clearance of personnel from the upper levels of the Unit 2 Reactor Drywell in preparation for removal and movement of irradiated core component from the Unit 2 reactor vessel. The licensee entered this issue into their corrective action plan (CAP) (IR 1495585).

The failure to adhere to Technical Specification required radiation protection procedures for personnel exposure control for irradiated core component movement is a performance deficiency. The performance deficiency was determined to be more than minor because it was related to the Programs and Process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation from radioactive material during routine reactor operation. Further, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern if personnel were locked in the area and irradiated hardware dropped above their work location. The finding was not subject to traditional enforcement because it was not associated with a violation that impacted the regulatory process and did not contribute to actual safety consequences. The finding was assessed using IMC 0609, Appendix C, 2 Enclosure “Occupational Radiation Safety SDP,” , dated August 19, 2008, and was determined to be of very low safety significance (Green) because it was not related to As-Low-As-Is-Reasonably-Achievable (ALARA), did not result in an overexposure or a substantial potential for overexposure, and did not compromise the licensee's ability to assess dose. This finding was associated with the Work Control aspect of the Human Performance cross-cutting component. Specifically, the licensee did not effectively coordinate this work activity by incorporating actions to address the impact of the work on different job activities, and the need for work groups to maintain interfaces and communicate, coordinate, and cooperate with each other during activities in which interdepartmental coordination is necessary to assure plant and human performance (H.3 (b)). (Section 2RS1)

Inspection Report# : 2013003 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Mar 31, 2009
Identified By: NRC
Item Type: AV Apparent Violation
Apparent Violation for Exelon Plants - 1 (2009 Findings)
For apparent violation #1:
Contrary to the above, on March 31, 2009 Exelon Generation Company, LLC (Exelon) provided incomplete and inaccurate information on the status of its decommissioning funding, as required by 10 CFR 50.75 when it submitted the decommissioning funding status report. Specifically, the March 31, 2009, decommissioning funding status (DFS) report contained inaccurate and incomplete information regarding Exelon's compliance with the requirements of 10 CFR 50.75. The report stated that the amount listed for each of the reactors was determined in accordance with 10 CFR 50.75(b) and the applicable formulas of 10 CFR 50.75(c). However, for each of the 23 reactors, the amount reported was a discounted value that was less than the minimum required amount specified by 10 CFR 50.75(b) and (c). The report was material to the NRC because Exelon under-reported its certified decommissioning amounts by approximately $4 billion, and the NRC staff evaluated the status of Exelon's decommissioning funds based on the inaccurate reports. After identifying the inaccurate information, the NRC required parent company guarantees before the staff could make its determination that there was reasonable assurance that funds will be available for the decommissioning process.
Inspection Report# : 2012012 *(pdf)*
Inspection Report# : 2013201 *(pdf)*

Significance: N/A Mar 31, 2009
Identified By: NRC
Item Type: AV Apparent Violation
Apparent Violation for Exelon Plants - 2 (2009 Findings)
For apparent violation #2:
Contrary to the above, on March 31, 2007, and March 31, 2005, Exelon Generation Company, LLC (Exelon) provided incomplete and inaccurate information on the status of its decommissioning funding, as required by 10 CFR 50.75 when it submitted the decommissioning funding status reports. Specifically, the March 31, 2007, and March 31, 2005,

decommissioning funding status (DFS) reports contained inaccurate and incomplete information regarding Exelon's compliance with the requirements of 10 CFR 50.75. The reports stated that the amount listed for each of the reactors was determined in accordance with 10 CFR 50.75(b) and the applicable formulas of 10 CFR 50.75(c). However, in multiple instances, the amount reported was a discounted value that was less than the minimum required amount specified by 10 CFR 50.75(b) and (c). The reports were material to the NRC because Exelon under-reported its certified decommissioning amounts, and the NRC staff evaluated the status of Exelon's decommissioning funds based on the inaccurate reports. After identifying the inaccurate information, the NRC required parent company guarantees before the staff could make its determination that there was reasonable assurance that funds will be available for the decommissioning process.
Inspection Report# : 2012012 *(pdf)*
Inspection Report# : 2013201 *(pdf)*

Last modified : May 30, 2014

Limerick 2
2Q/2014 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Technical Specification Surveillance Requirements on the Unit 2 Primary Containment Instrument Gas System
The inspectors identified a Green NCV of Technical Specification (TS) 6.8.1.a, "Procedures and Programs," for Exelon's failure to implement surveillance test procedures specified for the Primary Containment Instrument Gas (PCIG) system as required by Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements." Specifically, Exelon's PCIG local leak rate procedures, ST-4-LLR-011-2 and ST-4-LLR-241-2, incorrectly credited the surveillance testing of the PCIG supply header 'B' check primary containment isolation valve (059-2005B) in ST-6-059-201-2 "PCIG Valve Test" which resulted in entry into TS 4.0.3 for a missed surveillance. Exelon's corrective actions included an extent of condition review and revising PCIG check valve surveillance testing to correct the crediting of the wrong check valves due to the successful completion of Local Leak Rate Testing (LLRT). Exelon has entered this issue into their CAP as IR 1554992 and 1569903.

The failure to perform the surveillance requirements specified for the PCIG system, specifically, incorrectly crediting the surveillance testing of PCIG check valve 059-2005B which resulted in a missed surveillance, is a performance deficiency. The performance deficiency was determined to be more than minor, because it adversely affected the Procedure Quality attribute of the Mitigating Systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Exelon failed to ensure that the PCIG system surveillance testing adequately tested and credited the successful completion of LLRT. The finding is of very low safety significance (Green) per IMC 0609, Appendix A, Exhibit 2 - "Mitigating Systems Screening Questions," because the PCIG system was determined to maintain its operability and functionality, does not represent a loss of system and/or function and does not represent an actual loss of function of a single train for greater than its TS allowed outage time. The inspectors determined that the finding had a cross-cutting aspect in the area of PI&R, CAP, because Exelon did not thoroughly evaluate problems such that resolutions address causes and extent of conditions, including properly classifying, prioritizing, fully evaluated, and that actions are taken to address safety issues in a timely manner, commensurate with their safety significance [P.1(c)]. Specifically, Exelon personnel did not adequately address, thoroughly evaluate, and prioritize IR 1498740 which documented potential deficiencies with Unit 2 PCIG check valve testing, in a timely manner (Section 1R13). Converted cross cutting aspect to P.2.

Inspection Report# : 2013004 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions Following Repeat Test Failures of a High Pressure Coolant Injection System Level Instrument
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to adequately evaluate and correct repeat calibration test failures in April 2012 and in February 2014 on the Unit 2 high pressure coolant injection (HPCI) system suppression pool level transmitter LT-055-2N062F. This resulted in LT-055-2N062F, a technical specification (TS) required instrument, being in a degraded and unreliable condition. The inspectors determined that failure to adequately evaluate and correct the condition was reasonably within the ability to foresee and correct, and should have been prevented. LGS entered the issue into their corrective action program (CAP) for resolution as Issue Reports (IRs) 1646041, 1651480, and 1659171.

This NRC-identified finding is more than minor because it affected the Barrier Integrity cornerstone attribute of the reliability and availability of structures, systems, or components to maintain the functionality of containment and affected the cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the finding using Appendix A, "The Significance Determination Process for Findings At-Power," to IMC 0609, "Significance Determination Process." This finding was determined to be of very low safety significance (Green) because it was associated with the functionality of the reactor containment but didn't represent an actual open pathway in the physical integrity of containment, the containment isolation system, and heat removal components and, the finding did not involve an actual reduction in function of hydrogen igniters. In addition, the logic for the HPCI pump suction swap from the condensate storage tank to the suppression pool on high level in the suppression pool is a one-out-of-two logic. The inspectors determined that this function was available because the other channel which performs the function was not affected by the finding and was available during the time period in question with the exception of during brief testing periods.

The finding has a cross-cutting aspect in Problem Identification and Resolution, Evaluation, because LGS personnel did not thoroughly evaluate the issue to ensure that resolutions addressed the causes and extent of conditions commensurate with their safety significance [P.2].
Inspection Report# : 2014003 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Properly Plan Work for Failed Airlock Door Magnetic Switch
The inspectors identified a self-revealing finding (FIN) of very low safety significance (Green) was identified for Exelon's failure to appropriately prioritize work activities associated with a degraded Unit 2 magnetic switch for a secondary containment airlock door in accordance with Exelon procedure WC-AA-106, "Work Screening and Processing." This contributed to multiple airlock doors being opened simultaneously and resulted in a loss of reactor enclosure secondary containment integrity.

The failure of the station to properly prioritize the work order for the defective magnetic switch for the Unit 2 313' elevation reactor building-to-reactor building air supply room access airlock doors was a performance deficiency that was reasonably within Exelon's ability to foresee and correct and could have been prevented. This was caused by not performing a site impact review of reportability clarifications made by NUREG 1022, "Event Report Guidelines 10 CFR 50.72 and 50.73," Revision 3. The performance deficiency was also contrary to Exelon's procedure for work screening and processing. The finding was determined to be more than minor because it was associated with the Barrier Integrity cornerstone attribute of SSC and Barrier Performance (doors and instrumentation) and affected the

cornerstone objective of providing reasonable assurance that physical design barriers (secondary containment) protect the public from radionuclide releases caused by accidents or events. Specifically, opening two reactor building airlock doors at the same time did not maintain reasonable assurance that the secondary containment would be capable of performing its safety function in the event of a reactor accident. The finding was determined to be self-revealing because it was revealed through the receipt of an alarm in the main control room which required no active and deliberate observation by Exelon personnel. The finding was determined to be of very low safety significance (Green) in accordance with Appendix A of IMC 0609, "Significance Determination Process (SDP) for Findings At-Power." Specifically, the finding only represents a degradation of the radiological barrier function provided for the SBGT system. Exelon entered the issue into the CAP as IR 1553563. Corrective actions performed or planned included repairing the magnetic switch, verifying that the corrective maintenance backlog did not contain any other issues involving the airlock door indicating lights, developing a periodic routine test of the airlock door indicating circuits, and performing a site impact review of the changes make by NUREG 1022, Revision 3.

This finding had a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure that resources were available to minimize preventative maintenance deferrals and ensure maintenance and engineering backlogs were low enough to ensure that safety is maintained [H.2(a)]. Specifically, Exelon deferred implementation of the work order several times over a three year period which resulted in secondary containment becoming inoperable on September 3, 2013. Note: the cross-cutting aspect of this finding was changed from H.6, following IMC 0310 conversion, to H.3 per NRC Region I Letter from Ho K. Nieh, dated July 9, 2014. This change was also documented in NRC IR 05000352,353/2014003.

Inspection Report# : 2013005 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Mar 24, 2014
Identified By: NRC
Item Type: FIN Finding
Failure to Evaluate ODCM Change in Accordance with Technical Specification 6.14
The NRC identified an NCV of T/S 6.14, Offsite Dose Calculation Manual (ODCM), for failure to evaluate and provide sufficient information to support a change to the ODCM. Specifically, LGS revised the ODCM to allow the RHRSW monitors to be non-functional due to loss of flow for a period of up to 4 hours before they were required to be declared inoperable and did not provide sufficient information to support the change including a determination that the change would maintain the level of radioactive effluent release control. LGS entered the issue into their CAP as IR 1639697 and revised the applicable alarm response card (ARC-MRC-010 E4) to declare the monitor inoperable under similar conditions. A dose calculation was also completed that indicated no significant public dose consequences associated with the monitor’s inoperable status.

The failure to evaluate and provide sufficient information to support a change to the ODCM, in accordance with the requirements of TS 6.14 is a performance deficiency. This performance deficiency is more than minor because it affected the Public Radiation Safety Cornerstone attribute of Plant Facilities/Equipment and Instrumentation. Using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008, the inspectors determined this to be a finding of very low safety significance (Green) because: the finding was in the effluent release program; was not a substantial failure to implement the effluent program; and the dose to the public did not exceed the 10 Code of Federal Regulations (CFR) Part 50 Appendix I criterion or 10 CFR 20.1301(e) limits. This finding was associated with a cross cutting aspect of Human Performance, Design Margins. Specifically, LGS did not conduct a sufficiently rigorous review of a change in the operability status of a safety-related radiation monitor (RHRSW radiation monitors) to ensure that the change would not adversely impact the level of radioactive effluent release control (H.6).

Inspection Report# : 2014002 *(pdf)*

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : August 29, 2014

Limerick 2
3Q/2014 Plant Inspection Findings

Initiating Events

Mitigating Systems

Barrier Integrity

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions Following Repeat Test Failures of a High Pressure Coolant Injection System Level Instrument
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to adequately evaluate and correct repeat calibration test failures in April 2012 and in February 2014 on the Unit 2 high pressure coolant injection (HPCI) system suppression pool level transmitter LT-055-2N062F. This resulted in LT-055-2N062F, a technical specification (TS) required instrument, being in a degraded and unreliable condition. The inspectors determined that failure to adequately evaluate and correct the condition was reasonably within the ability to foresee and correct, and should have been prevented. LGS entered the issue into their corrective action program (CAP) for resolution as Issue Reports (IRs) 1646041, 1651480, and 1659171.

This NRC-identified finding is more than minor because it affected the Barrier Integrity cornerstone attribute of the reliability and availability of structures, systems, or components to maintain the functionality of containment and affected the cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the finding using Appendix A, "The Significance Determination Process for Findings At-Power," to IMC 0609, "Significance Determination Process." This finding was determined to be of very low safety significance (Green) because it was associated with the functionality of the reactor containment but didn't represent an actual open pathway in the physical integrity of containment, the containment isolation system, and heat removal components and, the finding did not involve an actual reduction in function of hydrogen igniters. In addition, the logic for the HPCI pump suction swap from the condensate storage tank to the suppression pool on high level in the suppression pool is a one-out-of-two logic. The inspectors determined that this function was available because the other channel which performs the function was not affected by the finding and was available during the time period in question with the exception of during brief testing periods.

The finding has a cross-cutting aspect in Problem Identification and Resolution, Evaluation, because LGS personnel did not thoroughly evaluate the issue to ensure that resolutions addressed the causes and extent of conditions commensurate with their safety significance [P.2].
Inspection Report# : 2014003 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Properly Plan Work for Failed Airlock Door Magnetic Switch
The inspectors identified a self-revealing finding (FIN) of very low safety significance (Green) was identified for Exelon's failure to appropriately prioritize work activities associated with a degraded Unit 2 magnetic switch for a secondary containment airlock door in accordance with Exelon procedure WC-AA-106, "Work Screening and Processing." This contributed to multiple airlock doors being opened simultaneously and resulted in a loss of reactor enclosure secondary containment integrity.

The failure of the station to properly prioritize the work order for the defective magnetic switch for the Unit 2 313' elevation reactor building-to-reactor building air supply room access airlock doors was a performance deficiency that was reasonably within Exelon's ability to foresee and correct and could have been prevented. This was caused by not performing a site impact review of reportability clarifications made by NUREG 1022, "Event Report Guidelines 10 CFR 50.72 and 50.73," Revision 3. The performance deficiency was also contrary to Exelon's procedure for work screening and processing. The finding was determined to be more than minor because it was associated with the Barrier Integrity cornerstone attribute of SSC and Barrier Performance (doors and instrumentation) and affected the cornerstone objective of providing reasonable assurance that physical design barriers (secondary containment) protect the public from radionuclide releases caused by accidents or events. Specifically, opening two reactor building airlock doors at the same time did not maintain reasonable assurance that the secondary containment would be capable of performing its safety function in the event of a reactor accident. The finding was determined to be self-revealing because it was revealed through the receipt of an alarm in the main control room which required no active and deliberate observation by Exelon personnel. The finding was determined to be of very low safety significance (Green) in accordance with Appendix A of IMC 0609, "Significance Determination Process (SDP) for Findings At-Power." Specifically, the finding only represents a degradation of the radiological barrier function provided for the SBGT system. Exelon entered the issue into the CAP as IR 1553563. Corrective actions performed or planned included repairing the magnetic switch, verifying that the corrective maintenance backlog did not contain any other issues involving the airlock door indicating lights, developing a periodic routine test of the airlock door indicating circuits, and performing a site impact review of the changes make by NUREG 1022, Revision 3.

This finding had a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure that resources were available to minimize preventative maintenance deferrals and ensure maintenance and engineering backlogs were low enough to ensure that safety is maintained [H.2(a)]. Specifically, Exelon deferred implementation of the work order several times over a three year period which resulted in secondary containment becoming inoperable on September 3, 2013. Note: the cross-cutting aspect of this finding was changed from H.6, following IMC 0310 conversion, to H.3 per NRC Region I Letter from Ho K. Nieh, dated July 9, 2014. This change was also documented in NRC IR 05000352,353/2014003.

Inspection Report# : 2013005 *(pdf)*

Emergency Preparedness

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Evacuation Time Estimate Submittals
The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (CFR) 50.54(q)(2), 10 CFR

50.47(b)(10), and 10 CFR Part 50, Appendix E, Section IV.4, for not maintaining the effectiveness of the LGS, Units 1 and 2, emergency plan as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date. Exelon entered this issue into their corrective action process (CAP) as issue reports (IR) 1525923 and 1578649. Additionally, Exelon re-submitted a new revision of the LGS ETE to the NRC on January 31, 2014.

This performance deficiency is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring that LGS is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was determined to be of very low safety significance (Green) because it was a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The cause of the finding is related to the cross-cutting element of Human Performance, Documentation, because LGS did not appropriately create and maintain complete, accurate and, up-to-date documentation [H.7]. (Section 1EP5)

Inspection Report# : 2014004 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Mar 24, 2014
Identified By: NRC
Item Type: FIN Finding
Failure to Evaluate ODCM Change in Accordance with Technical Specification 6.14
The NRC identified an NCV of T/S 6.14, Offsite Dose Calculation Manual (ODCM), for failure to evaluate and provide sufficient information to support a change to the ODCM. Specifically, LGS revised the ODCM to allow the RHRSW monitors to be non-functional due to loss of flow for a period of up to 4 hours before they were required to be declared inoperable and did not provide sufficient information to support the change including a determination that the change would maintain the level of radioactive effluent release control. LGS entered the issue into their CAP as IR 1639697 and revised the applicable alarm response card (ARC-MRC-010 E4) to declare the monitor inoperable under similar conditions. A dose calculation was also completed that indicated no significant public dose consequences associated with the monitor's inoperable status.

The failure to evaluate and provide sufficient information to support a change to the ODCM, in accordance with the requirements of TS 6.14 is a performance deficiency. This performance deficiency is more than minor because it affected the Public Radiation Safety Cornerstone attribute of Plant Facilities/Equipment and Instrumentation. Using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008, the inspectors determined this to be a finding of very low safety significance (Green) because: the finding was in the effluent release program; was not a substantial failure to implement the effluent program; and the dose to the public did not exceed the 10 Code of Federal Regulations (CFR) Part 50 Appendix I criterion or 10 CFR 20.1301(e) limits. This finding was associated with a cross cutting aspect of Human Performance, Design Margins. Specifically, LGS did not conduct a sufficiently rigorous review of a change in the operability status of a safety-related radiation monitor (RHRSW radiation monitors) to ensure that the change would not adversely impact the level of radioactive effluent release control (H.6).

Inspection Report# : 2014002 *(pdf)*

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : November 26, 2014

Limerick 2
4Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Unplanned Manual Power Reduction to 90% on Unit 1.
DRAFT STATUS A self-revealing, Green non-cited violation (NCV) of Technical Specification (TS) 6.8.1.b, "Administrative Controls," was identified for LGS's failure to properly implement station procedure MA-AA-716-100, "Maintenance Alterations Process", during troubleshooting and calibration associated with the condensate filter (CF) system. As a result, on September 9, 2014, one of two Instrument Maintenance (IM) technicians inadvertently mispositioned the air supply valve to the 1G CF flow transmitter causing an unplanned plant transient. The inspectors determined that the failure to properly implement station procedure MA-AA-716-100, "Maintenance Alterations Process" during troubleshooting of CF system instrumentation, was a performance deficiency. LGS promptly performed an investigation, verified the plant alignment and safely returned the Unit 1 reactor to 100 percent power. LGS entered the issue into their corrective action program (CAP) as issue report (IR) 2116233.

This self-revealing finding is more than minor because it affected the human performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions. This resulted in elevated main steam line radiation levels which required operators to reduce reactor power in accordance with abnormal operating procedures. The inspectors evaluated the finding using inspection manual chapter (IMC) 0609, Appendix A, "The Significance Determination Process for Findings At-Power", to IMC 0609, "Significance Determination Process." This finding was determined to be of very low safety significance (Green) because it was associated with a transient initiator, but didn't cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

The finding has a cross-cutting aspect in the area of Human Performance, because LGS maintenance management did not ensure supervisory and management oversight of work activities. [H.2] (Section 40A2).
Inspection Report# : 2014005 *(pdf)*

Mitigating Systems

Barrier Integrity

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation

Inadequate Corrective Actions Following Repeat Test Failures of a High Pressure Coolant Injection System Level Instrument
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to adequately evaluate and correct repeat calibration test failures in April 2012 and in February 2014 on the Unit 2 high pressure coolant injection (HPCI) system suppression pool level transmitter LT-055-2N062F. This resulted in LT-055-2N062F, a technical specification (TS) required instrument, being in a degraded and unreliable condition. The inspectors determined that failure to adequately evaluate and correct the condition was reasonably within the ability to foresee and correct, and should have been prevented. LGS entered the issue into their corrective action program (CAP) for resolution as Issue Reports (IRs) 1646041, 1651480, and 1659171.

This NRC-identified finding is more than minor because it affected the Barrier Integrity cornerstone attribute of the reliability and availability of structures, systems, or components to maintain the functionality of containment and affected the cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the finding using Appendix A, "The Significance Determination Process for Findings At-Power," to IMC 0609, "Significance Determination Process." This finding was determined to be of very low safety significance (Green) because it was associated with the functionality of the reactor containment but didn't represent an actual open pathway in the physical integrity of containment, the containment isolation system, and heat removal components and, the finding did not involve an actual reduction in function of hydrogen igniters. In addition, the logic for the HPCI pump suction swap from the condensate storage tank to the suppression pool on high level in the suppression pool is a one-out-of-two logic. The inspectors determined that this function was available because the other channel which performs the function was not affected by the finding and was available during the time period in question with the exception of during brief testing periods.

The finding has a cross-cutting aspect in Problem Identification and Resolution, Evaluation, because LGS personnel did not thoroughly evaluate the issue to ensure that resolutions addressed the causes and extent of conditions commensurate with their safety significance [P.2].
Inspection Report# : 2014003 *(pdf)*

Emergency Preparedness

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Evacuation Time Estimate Submittals
The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (CFR) 50.54(q)(2), 10 CFR 50.47(b)(10), and 10 CFR Part 50, Appendix E, Section IV.4, for not maintaining the effectiveness of the LGS, Units 1 and 2, emergency plan as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date. Exelon entered this issue into their corrective action process (CAP) as issue reports (IR) 1525923 and 1578649. Additionally, Exelon re-submitted a new revision of the LGS ETE to the NRC on January 31, 2014.

This performance deficiency is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring that LGS is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was determined to be of very low safety significance (Green) because it was a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The cause of the finding is related to the cross-

cutting element of Human Performance, Documentation, because LGS did not appropriately create and maintain complete, accurate and, up-to-date documentation [H.7]. (Section 1EP5)

Inspection Report# : 2014004 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Mar 24, 2014
Identified By: NRC
Item Type: FIN Finding
Failure to Evaluate ODCM Change in Accordance with Technical Specification 6.14
The NRC identified an NCV of T/S 6.14, Offsite Dose Calculation Manual (ODCM), for failure to evaluate and provide sufficient information to support a change to the ODCM. Specifically, LGS revised the ODCM to allow the RHRSW monitors to be non-functional due to loss of flow for a period of up to 4 hours before they were required to be declared inoperable and did not provide sufficient information to support the change including a determination that the change would maintain the level of radioactive effluent release control. LGS entered the issue into their CAP as IR 1639697 and revised the applicable alarm response card (ARC-MRC-010 E4) to declare the monitor inoperable under similar conditions. A dose calculation was also completed that indicated no significant public dose consequences associated with the monitor's inoperable status.

The failure to evaluate and provide sufficient information to support a change to the ODCM, in accordance with the requirements of TS 6.14 is a performance deficiency. This performance deficiency is more than minor because it affected the Public Radiation Safety Cornerstone attribute of Plant Facilities/Equipment and Instrumentation. Using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008, the inspectors determined this to be a finding of very low safety significance (Green) because: the finding was in the effluent release program; was not a substantial failure to implement the effluent program; and the dose to the public did not exceed the 10 Code of Federal Regulations (CFR) Part 50 Appendix I criterion or 10 CFR 20.1301(e) limits. This finding was associated with a cross cutting aspect of Human Performance, Design Margins. Specifically, LGS did not conduct a sufficiently rigorous review of a change in the operability status of a safety-related radiation monitor (RHRSW radiation monitors) to ensure that the change would not adversely impact the level of radioactive effluent release control (H.6).

Inspection Report# : 2014002 *(pdf)*

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related

information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : February 26, 2015

Limerick 2
1Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Unplanned Manual Power Reduction to 90% on Unit 1.
DRAFT STATUS A self-revealing, Green non-cited violation (NCV) of Technical Specification (TS) 6.8.1.b, "Administrative Controls," was identified for LGS's failure to properly implement station procedure MA-AA-716-100, "Maintenance Alterations Process", during troubleshooting and calibration associated with the condensate filter (CF) system. As a result, on September 9, 2014, one of two Instrument Maintenance (IM) technicians inadvertently mispositioned the air supply valve to the 1G CF flow transmitter causing an unplanned plant transient. The inspectors determined that the failure to properly implement station procedure MA-AA-716-100, "Maintenance Alterations Process" during troubleshooting of CF system instrumentation, was a performance deficiency. LGS promptly performed an investigation, verified the plant alignment and safely returned the Unit 1 reactor to 100 percent power. LGS entered the issue into their corrective action program (CAP) as issue report (IR) 2116233.

This self-revealing finding is more than minor because it affected the human performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions. This resulted in elevated main steam line radiation levels which required operators to reduce reactor power in accordance with abnormal operating procedures. The inspectors evaluated the finding using inspection manual chapter (IMC) 0609, Appendix A, "The Significance Determination Process for Findings At-Power", to IMC 0609, "Significance Determination Process." This finding was determined to be of very low safety significance (Green) because it was associated with a transient initiator, but didn't cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

The finding has a cross-cutting aspect in the area of Human Performance, because LGS maintenance management did not ensure supervisory and management oversight of work activities. [H.2] (Section 40A2).
Inspection Report# : 2014005 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Fire Safe Shutdown Diesel Generator Maintenance Program Did Not Account for Cold Temperatures due to Inadequate Specification for Fuel Oil Cloud Point
The inspectors identified an NCV of LGS Units 1 and 2 operating license condition 2.C(3), Fire Protection, because Exelon did not implement and maintain in effect all provisions of the NRC approved fire protection program. Specifically, Exelon did not implement and maintain a maintenance program to ensure the operability of the fire safe

shutdown diesel (FSSD) generator by not ensuring a fuel oil supply specified or protected for typical winter cold temperatures. Exelon's corrective actions included adding a fuel oil additive (modifiers which inhibit wax crystal growth) to improve low temperature flow and pour characteristics at a time when ambient temperatures were greater than the cloud point and initiating condition report IR 2463216.

This finding is more than minor because it adversely affected the protection against external factors (fire) attribute of the mitigating systems cornerstone to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to ensure the cloud point of the diesel fuel oil was below the temperature of the surrounding air would impact the reliable operation of the equipment during low temperature conditions. Using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not impact the ability of LGS Units 1 and 2 to achieve safe shutdown. Specifically, the cloud point of diesel fuel delivered onsite by the vendor was substantially lower than Exelon's specification, unavailability of the FSSD generator would not by itself prevent LGS from reaching and maintaining safe shutdown, and the need for powered ventilation given a loss of normal HVAC during cold weather would be less than during hot weather. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure that cold weather preparedness procedures were adequate to support nuclear safety. Specifically, Exelon relied upon the cold weather procedures to establish reliable equipment operation during cold temperatures, but the procedures did not address diesel fuel cloud point for equipment stored and/or operated outdoors [H.1]. (Section 1R15)

Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Startup Procedure Considered High Pressure Coolant Injection Operable With High Reactor Water Level Trip Actuated
The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR), Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Exelon prescribed a procedure affecting quality with instructions which were not appropriate to the circumstances. Specifically, procedure GP-2, "Normal Plant Startup," contained a note that stated high pressure coolant injection (HPCI) systems have been determined operable by engineering evaluation with a high level trip setpoint actuated. The inspectors determined that the note was inconsistent with Units 1 and 2 technical specifications (TS) and was not supported by an adequate engineering basis. Exelon's corrective actions included briefing staff to ensure HPCI system operability is appropriately assessed when implementing GP-2, initiating condition report IR 2464416, completing a procedure revision to reference an interim evaluation contained in the condition report, and initiating an action to complete an engineering evaluation.

This finding is more than minor because it is associated with the procedure quality attribute of the mitigating systems cornerstone and affected the objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, procedure GP-2 stated that the HPCI system was operable with a Level 8 trip present without the ability to automatically actuate upon a high drywell pressure without an engineering evaluation which was inconsistent with the existing safety analysis performed at normal operating reactor pressure and temperature. Using IMC 0609, "Significance Determination Process," Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not represent an actual loss of the HPCI system or function to inject high pressure emergency core cooling water. Specifically, the note in GP-2 allowed considering the HPCI system operable at normal operating reactor pressures with the HPCI system tripped. However, the HPCI system was not tripped at normal operating reactor pressures.

The inspectors determined that the finding did not have cross-cutting aspect because the procedure development

performance deficiency did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 1R20)

Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Corrective Actions Following Repeat Test Failures of a High Pressure Coolant Injection System Level Instrument
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to adequately evaluate and correct repeat calibration test failures in April 2012 and in February 2014 on the Unit 2 high pressure coolant injection (HPCI) system suppression pool level transmitter LT-055-2N062F. This resulted in LT-055-2N062F, a technical specification (TS) required instrument, being in a degraded and unreliable condition. The inspectors determined that failure to adequately evaluate and correct the condition was reasonably within the ability to foresee and correct, and should have been prevented. LGS entered the issue into their corrective action program (CAP) for resolution as Issue Reports (IRs) 1646041, 1651480, and 1659171.

This NRC-identified finding is more than minor because it affected the Barrier Integrity cornerstone attribute of the reliability and availability of structures, systems, or components to maintain the functionality of containment and affected the cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the finding using Appendix A, "The Significance Determination Process for Findings At-Power," to IMC 0609, "Significance Determination Process." This finding was determined to be of very low safety significance (Green) because it was associated with the functionality of the reactor containment but didn't represent an actual open pathway in the physical integrity of containment, the containment isolation system, and heat removal components and, the finding did not involve an actual reduction in function of hydrogen igniters. In addition, the logic for the HPCI pump suction swap from the condensate storage tank to the suppression pool on high level in the suppression pool is a one-out-of-two logic. The inspectors determined that this function was available because the other channel which performs the function was not affected by the finding and was available during the time period in question with the exception of during brief testing periods.

The finding has a cross-cutting aspect in Problem Identification and Resolution, Evaluation, because LGS personnel did not thoroughly evaluate the issue to ensure that resolutions addressed the causes and extent of conditions commensurate with their safety significance [P.2].
Inspection Report# : 2014003 *(pdf)*

Emergency Preparedness

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation

Inadequate Evacuation Time Estimate Submittals
The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (CFR) 50.54(q)(2), 10 CFR 50.47(b)(10), and 10 CFR Part 50, Appendix E, Section IV.4, for not maintaining the effectiveness of the LGS, Units 1 and 2, emergency plan as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date. Exelon entered this issue into their corrective action process (CAP) as issue reports (IR) 1525923 and 1578649. Additionally, Exelon re-submitted a new revision of the LGS ETE to the NRC on January 31, 2014.

This performance deficiency is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring that LGS is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was determined to be of very low safety significance (Green) because it was a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The cause of the finding is related to the cross-cutting element of Human Performance, Documentation, because LGS did not appropriately create and maintain complete, accurate and, up-to-date documentation [H.7]. (Section 1EP5)

Inspection Report# : 2014004 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : June 16, 2015

Limerick 2
2Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Unplanned Manual Power Reduction to 90% on Unit 1.
DRAFT STATUS A self-revealing, Green non-cited violation (NCV) of Technical Specification (TS) 6.8.1.b, "Administrative Controls," was identified for LGS's failure to properly implement station procedure MA-AA-716-100, "Maintenance Alterations Process", during troubleshooting and calibration associated with the condensate filter (CF) system. As a result, on September 9, 2014, one of two Instrument Maintenance (IM) technicians inadvertently mispositioned the air supply valve to the 1G CF flow transmitter causing an unplanned plant transient. The inspectors determined that the failure to properly implement station procedure MA-AA-716-100, "Maintenance Alterations Process" during troubleshooting of CF system instrumentation, was a performance deficiency. LGS promptly performed an investigation, verified the plant alignment and safely returned the Unit 1 reactor to 100 percent power. LGS entered the issue into their corrective action program (CAP) as issue report (IR) 2116233.

This self-revealing finding is more than minor because it affected the human performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions. This resulted in elevated main steam line radiation levels which required operators to reduce reactor power in accordance with abnormal operating procedures. The inspectors evaluated the finding using inspection manual chapter (IMC) 0609, Appendix A, "The Significance Determination Process for Findings At-Power", to IMC 0609, "Significance Determination Process." This finding was determined to be of very low safety significance (Green) because it was associated with a transient initiator, but didn't cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

The finding has a cross-cutting aspect in the area of Human Performance, because LGS maintenance management did not ensure supervisory and management oversight of work activities. [H.2] (Section 40A2).
Inspection Report# : 2014005 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Fire Safe Shutdown Diesel Generator Maintenance Program Did Not Account for Cold Temperatures due to Inadequate Specification for Fuel Oil Cloud Point
The inspectors identified an NCV of LGS Units 1 and 2 operating license condition 2.C(3), Fire Protection, because Exelon did not implement and maintain in effect all provisions of the NRC approved fire protection program. Specifically, Exelon did not implement and maintain a maintenance program to ensure the operability of the fire safe

shutdown diesel (FSSD) generator by not ensuring a fuel oil supply specified or protected for typical winter cold temperatures. Exelon's corrective actions included adding a fuel oil additive (modifiers which inhibit wax crystal growth) to improve low temperature flow and pour characteristics at a time when ambient temperatures were greater than the cloud point and initiating condition report IR 2463216.

This finding is more than minor because it adversely affected the protection against external factors (fire) attribute of the mitigating systems cornerstone to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to ensure the cloud point of the diesel fuel oil was below the temperature of the surrounding air would impact the reliable operation of the equipment during low temperature conditions. Using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not impact the ability of LGS Units 1 and 2 to achieve safe shutdown. Specifically, the cloud point of diesel fuel delivered onsite by the vendor was substantially lower than Exelon's specification, unavailability of the FSSD generator would not by itself prevent LGS from reaching and maintaining safe shutdown, and the need for powered ventilation given a loss of normal HVAC during cold weather would be less than during hot weather. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure that cold weather preparedness procedures were adequate to support nuclear safety. Specifically, Exelon relied upon the cold weather procedures to establish reliable equipment operation during cold temperatures, but the procedures did not address diesel fuel cloud point for equipment stored and/or operated outdoors [H.1]. (Section 1R15)

Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Startup Procedure Considered High Pressure Coolant Injection Operable With High Reactor Water Level Trip Actuated
The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR), Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Exelon prescribed a procedure affecting quality with instructions which were not appropriate to the circumstances. Specifically, procedure GP-2, "Normal Plant Startup," contained a note that stated high pressure coolant injection (HPCI) systems have been determined operable by engineering evaluation with a high level trip setpoint actuated. The inspectors determined that the note was inconsistent with Units 1 and 2 technical specifications (TS) and was not supported by an adequate engineering basis. Exelon's corrective actions included briefing staff to ensure HPCI system operability is appropriately assessed when implementing GP-2, initiating condition report IR 2464416, completing a procedure revision to reference an interim evaluation contained in the condition report, and initiating an action to complete an engineering evaluation.

This finding is more than minor because it is associated with the procedure quality attribute of the mitigating systems cornerstone and affected the objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, procedure GP-2 stated that the HPCI system was operable with a Level 8 trip present without the ability to automatically actuate upon a high drywell pressure without an engineering evaluation which was inconsistent with the existing safety analysis performed at normal operating reactor pressure and temperature. Using IMC 0609, "Significance Determination Process," Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not represent an actual loss of the HPCI system or function to inject high pressure emergency core cooling water. Specifically, the note in GP-2 allowed considering the HPCI system operable at normal operating reactor pressures with the HPCI system tripped. However, the HPCI system was not tripped at normal operating reactor pressures.

The inspectors determined that the finding did not have cross-cutting aspect because the procedure development

performance deficiency did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 1R20)

Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Evacuation Time Estimate Submittals
The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (CFR) 50.54(q)(2), 10 CFR 50.47(b)(10), and 10 CFR Part 50, Appendix E, Section IV.4, for not maintaining the effectiveness of the LGS, Units 1 and 2, emergency plan as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date. Exelon entered this issue into their corrective action process (CAP) as issue reports (IR) 1525923 and 1578649. Additionally, Exelon re-submitted a new revision of the LGS ETE to the NRC on January 31, 2014.

This performance deficiency is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring that LGS is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was determined to be of very low safety significance (Green) because it was a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The cause of the finding is related to the cross-cutting element of Human Performance, Documentation, because LGS did not appropriately create and maintain complete, accurate and, up-to-date documentation [H.7]. (Section 1EP5)

Inspection Report# : 2014004 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission

has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : August 07, 2015

Limerick 2
3Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Unplanned Manual Power Reduction to 90% on Unit 1.
A self-revealing, Green non-cited violation (NCV) of Technical Specification (TS) 6.8.1.b, "Administrative Controls," was identified for LGS' failure to properly implement station procedure MA-AA-716-100, "Maintenance Alterations Process," during trouble-shooting and calibration associated with the Unit 1 condensate filter (CF) system. As a result, on September 9, 2014, one of two Instrument Maintenance (IM) technicians inadvertently mispositioned the air supply valve to the 1G CF flow transmitter causing an unplanned plant transient. The inspectors determined that the failure to properly implement station procedure MA-AA-716-100, "Maintenance Alterations Process," during troubleshooting of CF system instrumentation, was a performance deficiency. LGS promptly performed an investigation, verified the plant alignment and safely returned the Unit 1 reactor to 100 percent power. LGS entered the issue into their corrective action program (CAP) as issue report (IR) 2116233.

This self-revealing finding is more than minor because it affected the human performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions. This resulted in elevated main steam line radiation levels which required operators to reduce reactor power in accordance with abnormal operating procedures. The inspectors evaluated the finding using inspection manual chapter (IMC) 0609, Appendix A, "The Significance Determination Process for Findings At-Power," to IMC 0609, "Significance Determination Process." This finding was determined to be of very low safety significance (Green) because it was associated with a transient initiator, but didn't cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The finding has a cross-cutting aspect in the area of Human Performance, because LGS maintenance management did not ensure supervisory and management oversight of work activities [H.2]. (Section 40A2)

Inspection Report# : 2014005 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Preventive Maintenance of the HPCI System Motor Control Center
A self-revealing Green NCV of Technical Specification (TS) 6.8.1.a, "Procedures and Programs," was identified because Exelon failed to adequately implement a preventive maintenance (PM) task for the 2DB-1-14 High Pressure Coolant Injection (HPCI) Direct Current (DC) Motor Control Center (MCC) cubicle. The root cause from a fire in the HPCI DC MCC on April 5, 2015 was determined to be that the administrative guidance to change the PM task in 1995

did not ensure all the work that was previously performed was now performed on the revised PM task. This led to the PM "M-095-002, 250 VDC Westinghouse MCU Maintenance, Revision 6" not being performed on the auxiliary compartment of the 2DB-1-14 cubicle. The cause of the fire, the 1A Timetactor, was located in the auxiliary compartment and would have been inspected and cleaned as a part of this PM.

This issue is more than minor because it was associated with the procedures quality attribute of the Mitigating Systems cornerstone, and adversely affected the cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, maintenance procedure M-095-002, 250 VDC Westinghouse MCU Maintenance, Revision 6, was not performed on both compartments of the 2DB-1-14 cubicle that led to the fire in the HPCI DC MCC which had the potential to affect HPCI system operation. Using IMC 0609, "Significance Determination Process, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of the HPCI system and the system maintained operability and functionality. Specifically, the affected portions of the HPCI system were a part of the HPCI vacuum tank condensate pump which is not required to ensure operability or functionality. The inspectors determined that the finding did not have a cross-cutting aspect because the PM task change did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 4OA3)

Inspection Report# : 2015003 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Fire Safe Shutdown Diesel Generator Maintenance Program Did Not Account for Cold Temperatures due to Inadequate Specification for Fuel Oil Cloud Point
The inspectors identified an NCV of LGS Units 1 and 2 operating license condition 2.C(3), Fire Protection, because Exelon did not implement and maintain in effect all provisions of the NRC approved fire protection program. Specifically, Exelon did not implement and maintain a maintenance program to ensure the operability of the fire safe shutdown diesel (FSSD) generator by not ensuring a fuel oil supply specified or protected for typical winter cold temperatures. Exelon's corrective actions included adding a fuel oil additive (modifiers which inhibit wax crystal growth) to improve low temperature flow and pour characteristics at a time when ambient temperatures were greater than the cloud point and initiating condition report IR 2463216.

This finding is more than minor because it adversely affected the protection against external factors (fire) attribute of the mitigating systems cornerstone to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to ensure the cloud point of the diesel fuel oil was below the temperature of the surrounding air would impact the reliable operation of the equipment during low temperature conditions. Using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not impact the ability of LGS Units 1 and 2 to achieve safe shutdown. Specifically, the cloud point of diesel fuel delivered onsite by the vendor was substantially lower than Exelon's specification, unavailability of the FSSD generator would not by itself prevent LGS from reaching and maintaining safe shutdown, and the need for powered ventilation given a loss of normal HVAC during cold weather would be less than during hot weather. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure that cold weather preparedness procedures were adequate to support nuclear safety. Specifically, Exelon relied upon the cold weather procedures to establish reliable equipment operation during cold temperatures, but the procedures did not address diesel fuel cloud point for equipment stored and/or operated outdoors [H.1]. (Section 1R15)

Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Startup Procedure Considered High Pressure Coolant Injection Operable With High Reactor Water Level Trip Actuated
The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR), Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Exelon prescribed a procedure affecting quality with instructions which were not appropriate to the circumstances. Specifically, procedure GP-2, "Normal Plant Startup," contained a note that stated high pressure coolant injection (HPCI) systems have been determined operable by engineering evaluation with a high level trip setpoint actuated. The inspectors determined that the note was inconsistent with Units 1 and 2 technical specifications (TS) and was not supported by an adequate engineering basis. Exelon's corrective actions included briefing staff to ensure HPCI system operability is appropriately assessed when implementing GP-2, initiating condition report IR 2464416, completing a procedure revision to reference an interim evaluation contained in the condition report, and initiating an action to complete an engineering evaluation.

This finding is more than minor because it is associated with the procedure quality attribute of the mitigating systems cornerstone and affected the objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, procedure GP-2 stated that the HPCI system was operable with a Level 8 trip present without the ability to automatically actuate upon a high drywell pressure without an engineering evaluation which was inconsistent with the existing safety analysis performed at normal operating reactor pressure and temperature. Using IMC 0609, "Significance Determination Process," Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not represent an actual loss of the HPCI system or function to inject high pressure emergency core cooling water. Specifically, the note in GP-2 allowed considering the HPCI system operable at normal operating reactor pressures with the HPCI system tripped. However, the HPCI system was not tripped at normal operating reactor pressures.

The inspectors determined that the finding did not have cross-cutting aspect because the procedure development performance deficiency did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 1R20)

Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : December 15, 2015

Limerick 2
4Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Preventive Maintenance of the HPCI System Motor Control Center
A self-revealing Green NCV of Technical Specification (TS) 6.8.1.a, "Procedures and Programs," was identified because Exelon failed to adequately implement a preventive maintenance (PM) task for the 2DB-1-14 High Pressure Coolant Injection (HPCI) Direct Current (DC) Motor Control Center (MCC) cubicle. The root cause from a fire in the HPCI DC MCC on April 5, 2015 was determined to be that the administrative guidance to change the PM task in 1995 did not ensure all the work that was previously performed was now performed on the revised PM task. This led to the PM "M-095-002, 250 VDC Westinghouse MCU Maintenance, Revision 6" not being performed on the auxiliary compartment of the 2DB-1-14 cubicle. The cause of the fire, the 1A Timetactor, was located in the auxiliary compartment and would have been inspected and cleaned as a part of this PM.

This issue is more than minor because it was associated with the procedures quality attribute of the Mitigating Systems cornerstone, and adversely affected the cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, maintenance procedure M-095-002, 250 VDC Westinghouse MCU Maintenance, Revision 6, was not performed on both compartments of the 2DB-1-14 cubicle that led to the fire in the HPCI DC MCC which had the potential to affect HPCI system operation. Using IMC 0609, "Significance Determination Process, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of the HPCI system and the system maintained operability and functionality. Specifically, the affected portions of the HPCI system were a part of the HPCI vacuum tank condensate pump which is not required to ensure operability or functionality. The inspectors determined that the finding did not have a cross-cutting aspect because the PM task change did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 4OA3)

Inspection Report# : 2015003 *(pdf)*

Significance: G Jul 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify Adequacy of EDG Voltage to Start Safety Related Motors
The team identified a finding of very low safety significance involving a non-cited violation (NCV) of the 10 CFR Part 50, Appendix B, Criterion III, "Design Control," in that Exelon did not verify and assure in design basis calculations, that adequate voltage would be available for starting Class 1E accident mitigating motors when the safeguards buses are powered by the emergency diesel generators (EDG). Specifically, in the calculation performed to

evaluate voltage available to individual motors when they are powered by the EDGs, Exelon assumed that the generator output voltage would be 4285 Volts, alternating current (Vac), rather than the minimum voltage allowed by station technical specifications (4160 Vac). Additionally, the electrical ratings of loads powered by the EDG were not adjusted for the maximum frequency allowed by station technical specifications (61.2 hertz (Hz)). As a result, the starting voltage for some of the safety-related motors would not have been acceptable under EDG generator voltage and frequency limiting conditions. In response, Exelon entered the issue into their corrective action program and performed evaluation that determined that EDG actual test results demonstrated the EDGs to be operable. The team review of the evaluation determined it to be reasonable. This finding was more than minor because it was similar to Example 3.j of NRC IMC 0612, Appendix E, and was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design deficiency confirmed not to result in a loss of safety-related motor operability or functionality. The team determined this finding had a cross-cutting aspect in the area of Problem Identification and Resolution (Identification, Aspect P.1), because during a calculation revision in 2014, Exelon did not recognize that the limits of voltage and frequency allowed by the station technical specifications affected the calculation results and, therefore, did not completely and accurately identify the issue and revise the calculation in accordance with the station's corrective action program requirements.
Inspection Report# : 2015007 *(pdf)*

Significance: G Jul 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify Adequate Voltage Available for DC Equipment
The team identified a finding of very low safety significance involving a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," in that Exelon's design control measures did not verify the adequacy of the design regarding adequate direct current voltage (Vdc). Specifically, Exelon did not ensure that adequate voltage existed to emergency diesel generator (EDG) relays and output breaker spring charging motors. Additionally, the team determined that the overall impact to voltage drop calculations was not adequately assessed when the temporary battery cart is used. Following identification of the issue, Exelon entered it into their corrective action program and evaluated the operability of the batteries, concluding that the affected DC components would function at the current battery capacities. The team's review of the evaluation determined it to be reasonable. The finding was more than minor because it was similar to Example 3.j of NRC IMC 0612, Appendix E, and was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design deficiency affecting the safety-related batteries that did not result in the loss of operability or functionality. The team determined this finding had a cross-cutting aspect in the area of Human Performance, (Documentation, Aspect H.7) because the battery sizing calculation was revised on March 15, 2014, which provided an opportunity to identify the inaccuracies of the battery calculations.
Inspection Report# : 2015007 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Fire Safe Shutdown Diesel Generator Maintenance Program Did Not Account for Cold Temperatures due to Inadequate Specification for Fuel Oil Cloud Point
The inspectors identified an NCV of LGS Units 1 and 2 operating license condition 2.C(3), Fire Protection, because Exelon did not implement and maintain in effect all provisions of the NRC approved fire protection program. Specifically, Exelon did not implement and maintain a maintenance program to ensure the operability of the fire safe

shutdown diesel (FSSD) generator by not ensuring a fuel oil supply specified or protected for typical winter cold temperatures. Exelon's corrective actions included adding a fuel oil additive (modifiers which inhibit wax crystal growth) to improve low temperature flow and pour characteristics at a time when ambient temperatures were greater than the cloud point and initiating condition report IR 2463216.

This finding is more than minor because it adversely affected the protection against external factors (fire) attribute of the mitigating systems cornerstone to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to ensure the cloud point of the diesel fuel oil was below the temperature of the surrounding air would impact the reliable operation of the equipment during low temperature conditions. Using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not impact the ability of LGS Units 1 and 2 to achieve safe shutdown. Specifically, the cloud point of diesel fuel delivered onsite by the vendor was substantially lower than Exelon's specification, unavailability of the FSSD generator would not by itself prevent LGS from reaching and maintaining safe shutdown, and the need for powered ventilation given a loss of normal HVAC during cold weather would be less than during hot weather. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure that cold weather preparedness procedures were adequate to support nuclear safety. Specifically, Exelon relied upon the cold weather procedures to establish reliable equipment operation during cold temperatures, but the procedures did not address diesel fuel cloud point for equipment stored and/or operated outdoors [H.1]. (Section 1R15)

Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Startup Procedure Considered High Pressure Coolant Injection Operable With High Reactor Water Level Trip Actuated
The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR), Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Exelon prescribed a procedure affecting quality with instructions which were not appropriate to the circumstances. Specifically, procedure GP-2, "Normal Plant Startup," contained a note that stated high pressure coolant injection (HPCI) systems have been determined operable by engineering evaluation with a high level trip setpoint actuated. The inspectors determined that the note was inconsistent with Units 1 and 2 technical specifications (TS) and was not supported by an adequate engineering basis. Exelon's corrective actions included briefing staff to ensure HPCI system operability is appropriately assessed when implementing GP-2, initiating condition report IR 2464416, completing a procedure revision to reference an interim evaluation contained in the condition report, and initiating an action to complete an engineering evaluation.

This finding is more than minor because it is associated with the procedure quality attribute of the mitigating systems cornerstone and affected the objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, procedure GP-2 stated that the HPCI system was operable with a Level 8 trip present without the ability to automatically actuate upon a high drywell pressure without an engineering evaluation which was inconsistent with the existing safety analysis performed at normal operating reactor pressure and temperature. Using IMC 0609, "Significance Determination Process," Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not represent an actual loss of the HPCI system or function to inject high pressure emergency core cooling water. Specifically, the note in GP-2 allowed considering the HPCI system operable at normal operating reactor pressures with the HPCI system tripped. However, the HPCI system was not tripped at normal operating reactor pressures.

The inspectors determined that the finding did not have cross-cutting aspect because the procedure development

performance deficiency did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 1R20)

Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Procedure for RWCU Backwashing Operations
A self-revealing Green NCV of Technical Specification (TS) 6.8.1.a, "Procedures and Programs," occurred because Exelon failed to establish, implement, and maintain an adequate procedure for the control of radioactivity and limiting personnel exposure during operation of a solid radioactive waste system. Specifically, the procedure for the conduct of reactor water cleanup (RWCU) filter media backwashing and collection was inadequate to ensure a sufficient receiving tank volume prior to transferring waste media. On June 28, 2015, this resulted in the overflow of a Unit 2 RWCU collection tank and back up of the reactor building floor drain system, causing high levels of radioactive contamination in accessible portions of the Unit 2 reactor building, and resulting in radioactive contamination of personnel. Exelon controlled access, decontaminated affected areas and personnel, conducted bounding dose assessments, performed extent of condition reviews, and revised affected procedures to address the issue. Exelon placed this issue into the corrective action program as issue report (IR) 2520732.

This issue is more-than-minor because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, the failure to effectively control and manage radioactive material could result in significant unplanned, unintended occupational radiation exposure of workers. Using IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve an as low as is reasonable achievable (ALARA) issue, was not an overexposure, did not result in a substantial potential for an overexposure, and did not compromise the ability to assess dose. The inspectors determined this finding has a cross-cutting aspect in the area of Human Performance, Avoiding Complacency, because Exelon did not recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes, and therefore did not implement appropriate error reduction tools. Specifically, Exelon operated the backwash receiving tank (BWRT) to routinely accept high level alarms with associated potential for system overflow. Consequently, although this mode of operation of the system was longstanding, the issue reflects present performance [H.12]. (Section 2RS1)
Inspection Report# : 2015003 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : March 01, 2016

Limerick 2
1Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Main Turbine Digital Electrohydraulic Control System Modification Failed to Revise the Plant Startup Procedure
A self-revealing Green NCV of LGS Unit 2 technical specification 6.8.1 was identified because Exelon failed to maintain a plant startup procedure. Specifically, the implementing procedure for normal plant startup from hot shutdown or cold shutdown to rated power was not maintained when a modification to the Unit 2 turbine electrohydraulic control system was performed and required changes to the plant startup procedure were not identified and implemented. Exelon initiated issue report (IR) 2602637, revised the startup procedure to properly incorporate the software changes made at the factory acceptance test, validated the software changes that were made were technically correct, trained all operators on the new procedural changes, and reviewed operating procedures for extent of condition.

This finding is more than minor because it is associated with the procedure quality attribute of the initiating events cornerstone and affected the objective to limit the likelihood of events that upset plant stability during power operations. Specifically, the procedure directed actions intended in the software for rapid reactor depressurization that resulted in a reactor trip. Using IMC 0609, “Significance Determination Process,” Appendix A, Exhibit 1, “Initiating Events Screening Questions,” the inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause both a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. Specifically, although the finding caused a Level 8 trip of the feedwater pumps followed by a reactor trip, the rate of water injection from the condensate pumps was sufficient when the reactor was tripped to safely shutdown and operators were able to reset the feedwater pumps. The inspectors determined that this finding has a cross-cutting in the area of Human Performance, Change Management, because leaders did not use a systematic process for implementing the modification so that nuclear safety remained the overriding priority. [H.3] (Section 4OA3)

Inspection Report# : 2016001 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Work Staging and Housekeeping Walkdowns During Pre-Outage Preparations
The inspectors identified a Green NCV of technical specification 6.8.1 for Exelon’s failure to properly control, store, and stage material in accordance with station procedures within Class I buildings during refueling outage preparation. Specifically, Exelon personnel did not secure numerous rolling carts staged in both units, did not secure welding

blankets in the common pipe tunnel to prevent blocking floor drains, and did not properly build scaffolds to include engineering approval for scaffold procedure deviations. In addition, Exelon's housekeeping and material condition program did not identify and resolve these conditions through the corrective action process during a time of increased activities in the plant. Exelon restrained the carts and other rolling equipment, removed the weld blankets, and removed, reworked, and evaluated scaffolding.

This finding is more than minor because it adversely affected the protection against external factors (flood and seismic hazards) attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the loose unattended welding blankets would have blocked the pipe tunnel floor drains during an analyzed internal flooding event which would result in structural failures if not identified and corrected by operations personnel; the unrestrained carts would translate and rotate during a seismic event which could potentially impact safety related equipment and challenge the function or barrier; and the scaffold clearance and attachment issues could potentially cause impact with ductwork, cable trays, hangers, and structural supports during a seismic event. In addition, the performance deficiency is similar to the more-than-minor example described in IMC 0612, Appendix E, example 4.A, in that Exelon routinely failed to perform engineering evaluations on similar issues. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding is a deficiency affecting the design or qualification of mitigating structures, systems, and components, and the actual functions of the structures, systems, and components were maintained. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Training, because the organization did not provide sufficient training to maintain a knowledgeable workforce with respect to proper material handling and storage, awareness of flood hazards and floor drains, and scaffolding requirements. [H.9]

Inspection Report# : 2016001 *(pdf)*

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Preventive Maintenance of the HPCI System Motor Control Center
A self-revealing Green NCV of Technical Specification (TS) 6.8.1.a, "Procedures and Programs," was identified because Exelon failed to adequately implement a preventive maintenance (PM) task for the 2DB-1-14 High Pressure Coolant Injection (HPCI) Direct Current (DC) Motor Control Center (MCC) cubicle. The root cause from a fire in the HPCI DC MCC on April 5, 2015 was determined to be that the administrative guidance to change the PM task in 1995 did not ensure all the work that was previously performed was now performed on the revised PM task. This led to the PM "M-095-002, 250 VDC Westinghouse MCU Maintenance, Revision 6" not being performed on the auxiliary compartment of the 2DB-1-14 cubicle. The cause of the fire, the 1A Timetactor, was located in the auxiliary compartment and would have been inspected and cleaned as a part of this PM.

This issue is more than minor because it was associated with the procedures quality attribute of the Mitigating Systems cornerstone, and adversely affected the cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, maintenance procedure M-095-002, 250 VDC Westinghouse MCU Maintenance, Revision 6, was not performed on both compartments of the 2DB-1-14 cubicle that led to the fire in the HPCI DC MCC which had the potential to affect HPCI system operation. Using IMC 0609, "Significance Determination Process, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of the HPCI system and the system maintained operability and functionality. Specifically, the affected portions of the HPCI system were a part of the HPCI vacuum tank condensate pump which is not required to ensure operability or functionality. The inspectors determined that the finding did not have a cross-cutting aspect because the PM task change did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 4OA3)

Inspection Report# : 2015003 *(pdf)*

Significance: G Jul 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify Adequacy of EDG Voltage to Start Safety Related Motors
The team identified a finding of very low safety significance involving a non-cited violation (NCV) of the 10 CFR Part 50, Appendix B, Criterion III, "Design Control," in that Exelon did not verify and assure in design basis calculations, that adequate voltage would be available for starting Class 1E accident mitigating motors when the safeguards buses are powered by the emergency diesel generators (EDG). Specifically, in the calculation performed to evaluate voltage available to individual motors when they are powered by the EDGs, Exelon assumed that the generator output voltage would be 4285 Volts, alternating current (Vac), rather than the minimum voltage allowed by station technical specifications (4160 Vac). Additionally, the electrical ratings of loads powered by the EDG were not adjusted for the maximum frequency allowed by station technical specifications (61.2 hertz (Hz)). As a result, the starting voltage for some of the safety-related motors would not have been acceptable under EDG generator voltage and frequency limiting conditions. In response, Exelon entered the issue into their corrective action program and performed evaluation that determined that EDG actual test results demonstrated the EDGs to be operable. The team review of the evaluation determined it to be reasonable. This finding was more than minor because it was similar to Example 3.j of NRC IMC 0612, Appendix E, and was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design deficiency confirmed not to result in a loss of safety-related motor operability or functionality. The team determined this finding had a cross-cutting aspect in the area of Problem Identification and Resolution (Identification, Aspect P.1), because during a calculation revision in 2014, Exelon did not recognize that the limits of voltage and frequency allowed by the station technical specifications affected the calculation results and, therefore, did not completely and accurately identify the issue and revise the calculation in accordance with the station's corrective action program requirements.
Inspection Report# : 2015007 *(pdf)*

Significance: G Jul 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify Adequate Voltage Available for DC Equipment
The team identified a finding of very low safety significance involving a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," in that Exelon's design control measures did not verify the adequacy of the design regarding adequate direct current voltage (Vdc). Specifically, Exelon did not ensure that adequate voltage existed to emergency diesel generator (EDG) relays and output breaker spring charging motors. Additionally, the team determined that the overall impact to voltage drop calculations was not adequately assessed when the temporary battery cart is used. Following identification of the issue, Exelon entered it into their corrective action program and evaluated the operability of the batteries, concluding that the affected DC components would function at the current battery capacities. The team's review of the evaluation determined it to be reasonable. The finding was more than minor because it was similar to Example 3.j of NRC IMC 0612, Appendix E, and was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design deficiency affecting the safety-related batteries that did not result in the loss of operability or functionality. The team determined this finding had a cross-cutting aspect in the area of Human Performance, (Documentation, Aspect H.7) because the battery sizing calculation was revised on March 15, 2014, which provided an opportunity to identify the inaccuracies

of the battery calculations.
Inspection Report# : 2015007 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Entry Into A High Radiation Area Without Radiological Briefing and Complying With The RWP
A self-revealing Green NCV of LGS Unit 1 technical specification 6.12.1 was identified involving improper entry of two workers into the Unit 1 reactor drywell on
March 22, 2016. Specifically, the workers entered the drywell, an area controlled as a Locked High Radiation Area, without obtaining the required access radiological conditions briefing. Further, one of the two workers entered under the control of an RWP that did not authorize access into High Radiation Areas. Exelon initiated IR 2644005, restricted the workers from further radiological controlled area access, re-configured the access area, conducted an extent of condition and human performance review, issued a site communication, and performed a staff stand down.

This finding is more than minor because it is associated with the programs and process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure adequate protection of workers from radiation exposure.

In addition, this example is similar to example 6.h of IMC 0612, Appendix E. Specifically, the workers did not receive a brief and did not review surveys prior to entering a work area with radiation levels that exceeded 100 mrem/hr at 30 cm. Using IMC 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the inspectors determined the finding was of very low safety significance (Green) because: 1) it was not an as low as is reasonably achievable (ALARA) finding, 2) there was no overexposure, 3) there was no substantial potential for an overexposure, and 4) the ability to assess dose was not compromised. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because the individuals failed to follow verbal work instructions. [H.8] (Section 2RS1)

Inspection Report# : 2016001 *(pdf)*

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Procedure for RWCU Backwashing Operations

A self-revealing Green NCV of Technical Specification (TS) 6.8.1.a, “Procedures and Programs,” occurred because Exelon failed to establish, implement, and maintain an adequate procedure for the control of radioactivity and limiting personnel exposure during operation of a solid radioactive waste system. Specifically, the procedure for the conduct of reactor water cleanup (RWCU) filter media backwashing and collection was inadequate to ensure a sufficient receiving tank volume prior to transferring waste media. On June 28, 2015, this resulted in the overflow of a Unit 2 RWCU collection tank and back up of the reactor building floor drain system, causing high levels of radioactive contamination in accessible portions of the Unit 2 reactor building, and resulting in radioactive contamination of personnel. Exelon controlled access, decontaminated affected areas and personnel, conducted bounding dose assessments, performed extent of condition reviews, and revised affected procedures to address the issue. Exelon placed this issue into the corrective action program as issue report (IR) 2520732.

This issue is more-than-minor because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, the failure to effectively control and manage radioactive material could result in significant unplanned, unintended occupational radiation exposure of workers. Using IMC 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve an as low as is reasonable achievable (ALARA) issue, was not an overexposure, did not result in a substantial potential for an overexposure, and did not compromise the ability to assess dose. The inspectors determined this finding has a cross-cutting aspect in the area of Human Performance, Avoiding Complacency, because Exelon did not recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes, and therefore did not implement appropriate error reduction tools. Specifically, Exelon operated the backwash receiving tank (BWRT) to routinely accept high level alarms with associated potential for system overflow. Consequently, although this mode of operation of the system was longstanding, the issue reflects present performance [H.12]. (Section 2RS1)
Inspection Report# : 2015003 *(pdf)*

Public Radiation Safety

Significance: G Mar 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Implement Procedures for Control of Potentially Contaminated Clean Systems
The inspectors identified a Green NCV of technical specification 6.8.1 because Exelon failed to implement procedure CY-AA-170-210, “Potentially Contaminated System Control Program,” for the evaluation and control of potentially cross-contaminated systems. Specifically, Exelon did not implement CY-AA-170-210 for the evaluation and control of a potentially cross-contaminated system when samples collected from the Unit 2 service air system, a non-contaminated system, indicated the potential presence of contamination on June 16, 2015. Exelon entered this issue into the corrective action program (IR 2556568), restricted use of the service air system, conducted a 10 CFR 50.59 screening and radiological evaluation of the system, conducted bounding radiation dose analyses for both occupational workers and members of the public, conducted an extent of condition review, decontaminated the system, and subsequently modified operation of the service air system to preclude re-contamination.

This finding is more-than-minor because it is associated with the program and process attributes of the occupational and public radiation safety cornerstones and adversely affected both cornerstone objectives to ensure adequate protection of worker and public health and safety from exposure to radioactive material. Specifically, during the time the service air system was contaminated but not recognized as such and not restricted in use, the potential existed to inadvertently contaminate workers and release radioactive material to the environment. Using IMC 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the inspectors determined that this finding

was of
very low safety significance (Green) because the finding did not involve an as low as is reasonably achievable (ALARA) issue, was not an overexposure, did not result in a substantial potential for an overexposure, and did not compromise the ability to assess dose. In addition, using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," the inspectors determined that the issue did not involve a substantial failure to implement the effluent release program and did not result in public doses exceeding 10 CFR 50, Appendix I or 10 CFR 20.1301 (e) and thus was of very low safety significance (Green). The inspectors determined this finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, because Exelon
did not take effective corrective actions when service air system issues were identified. [P.3] (Section 4OA3)

Inspection Report# : 2016001 *(pdf)*

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : July 11, 2016

Limerick 2
2Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Main Turbine Digital Electrohydraulic Control System Modification Failed to Revise the Plant Startup Procedure
A self-revealing Green NCV of LGS Unit 2 technical specification 6.8.1 was identified because Exelon failed to maintain a plant startup procedure. Specifically, the implementing procedure for normal plant startup from hot shutdown or cold shutdown to rated power was not maintained when a modification to the Unit 2 turbine electrohydraulic control system was performed and required changes to the plant startup procedure were not identified and implemented. Exelon initiated issue report (IR) 2602637, revised the startup procedure to properly incorporate the software changes made at the factory acceptance test, validated the software changes that were made were technically correct, trained all operators on the new procedural changes, and reviewed operating procedures for extent of condition.

This finding is more than minor because it is associated with the procedure quality attribute of the initiating events cornerstone and affected the objective to limit the likelihood of events that upset plant stability during power operations. Specifically, the procedure directed actions intended in the software for rapid reactor depressurization that resulted in a reactor trip. Using IMC 0609, “Significance Determination Process,” Appendix A, Exhibit 1, “Initiating Events Screening Questions,” the inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause both a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. Specifically, although the finding caused a Level 8 trip of the feedwater pumps followed by a reactor trip, the rate of water injection from the condensate pumps was sufficient when the reactor was tripped to safely shutdown and operators were able to reset the feedwater pumps. The inspectors determined that this finding has a cross-cutting in the area of Human Performance, Change Management, because leaders did not use a systematic process for implementing the modification so that nuclear safety remained the overriding priority. [H.3] (Section 4OA3)

Inspection Report# : 2016001 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Work Staging and Housekeeping Walkdowns During Pre-Outage Preparations
The inspectors identified a Green NCV of technical specification 6.8.1 for Exelon’s failure to properly control, store, and stage material in accordance with station procedures within Class I buildings during refueling outage preparation. Specifically, Exelon personnel did not secure numerous rolling carts staged in both units, did not secure welding

blankets in the common pipe tunnel to prevent blocking floor drains, and did not properly build scaffolds to include engineering approval for scaffold procedure deviations. In addition, Exelon's housekeeping and material condition program did not identify and resolve these conditions through the corrective action process during a time of increased activities in the plant. Exelon restrained the carts and other rolling equipment, removed the weld blankets, and removed, reworked, and evaluated scaffolding.

This finding is more than minor because it adversely affected the protection against external factors (flood and seismic hazards) attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the loose unattended welding blankets would have blocked the pipe tunnel floor drains during an analyzed internal flooding event which would result in structural failures if not identified and corrected by operations personnel; the unrestrained carts would translate and rotate during a seismic event which could potentially impact safety related equipment and challenge the function or barrier; and the scaffold clearance and attachment issues could potentially cause impact with ductwork, cable trays, hangers, and structural supports during a seismic event. In addition, the performance deficiency is similar to the more-than-minor example described in IMC 0612, Appendix E, example 4.A, in that Exelon routinely failed to perform engineering evaluations on similar issues. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding is a deficiency affecting the design or qualification of mitigating structures, systems, and components, and the actual functions of the structures, systems, and components were maintained. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Training, because the organization did not provide sufficient training to maintain a knowledgeable workforce with respect to proper material handling and storage, awareness of flood hazards and floor drains, and scaffolding requirements. [H.9]

Inspection Report# : 2016001 *(pdf)*

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Preventive Maintenance of the HPCI System Motor Control Center
A self-revealing Green NCV of Technical Specification (TS) 6.8.1.a, "Procedures and Programs," was identified because Exelon failed to adequately implement a preventive maintenance (PM) task for the 2DB-1-14 High Pressure Coolant Injection (HPCI) Direct Current (DC) Motor Control Center (MCC) cubicle. The root cause from a fire in the HPCI DC MCC on April 5, 2015 was determined to be that the administrative guidance to change the PM task in 1995 did not ensure all the work that was previously performed was now performed on the revised PM task. This led to the PM "M-095-002, 250 VDC Westinghouse MCU Maintenance, Revision 6" not being performed on the auxiliary compartment of the 2DB-1-14 cubicle. The cause of the fire, the 1A Timetactor, was located in the auxiliary compartment and would have been inspected and cleaned as a part of this PM.

This issue is more than minor because it was associated with the procedures quality attribute of the Mitigating Systems cornerstone, and adversely affected the cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, maintenance procedure M-095-002, 250 VDC Westinghouse MCU Maintenance, Revision 6, was not performed on both compartments of the 2DB-1-14 cubicle that led to the fire in the HPCI DC MCC which had the potential to affect HPCI system operation. Using IMC 0609, "Significance Determination Process, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of the HPCI system and the system maintained operability and functionality. Specifically, the affected portions of the HPCI system were a part of the HPCI vacuum tank condensate pump which is not required to ensure operability or functionality. The inspectors determined that the finding did not have a cross-cutting aspect because the PM task change did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 4OA3)

Inspection Report# : 2015003 *(pdf)*

Significance: G Jul 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify Adequacy of EDG Voltage to Start Safety Related Motors
The team identified a finding of very low safety significance involving a non-cited violation (NCV) of the 10 CFR Part 50, Appendix B, Criterion III, "Design Control," in that Exelon did not verify and assure in design basis calculations, that adequate voltage would be available for starting Class 1E accident mitigating motors when the safeguards buses are powered by the emergency diesel generators (EDG). Specifically, in the calculation performed to evaluate voltage available to individual motors when they are powered by the EDGs, Exelon assumed that the generator output voltage would be 4285 Volts, alternating current (Vac), rather than the minimum voltage allowed by station technical specifications (4160 Vac). Additionally, the electrical ratings of loads powered by the EDG were not adjusted for the maximum frequency allowed by station technical specifications (61.2 hertz (Hz)). As a result, the starting voltage for some of the safety-related motors would not have been acceptable under EDG generator voltage and frequency limiting conditions. In response, Exelon entered the issue into their corrective action program and performed evaluation that determined that EDG actual test results demonstrated the EDGs to be operable. The team review of the evaluation determined it to be reasonable. This finding was more than minor because it was similar to Example 3.j of NRC IMC 0612, Appendix E, and was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design deficiency confirmed not to result in a loss of safety-related motor operability or functionality. The team determined this finding had a cross-cutting aspect in the area of Problem Identification and Resolution (Identification, Aspect P.1), because during a calculation revision in 2014, Exelon did not recognize that the limits of voltage and frequency allowed by the station technical specifications affected the calculation results and, therefore, did not completely and accurately identify the issue and revise the calculation in accordance with the station's corrective action program requirements.
Inspection Report# : 2015007 *(pdf)*

Significance: G Jul 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Verify Adequate Voltage Available for DC Equipment
The team identified a finding of very low safety significance involving a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," in that Exelon's design control measures did not verify the adequacy of the design regarding adequate direct current voltage (Vdc). Specifically, Exelon did not ensure that adequate voltage existed to emergency diesel generator (EDG) relays and output breaker spring charging motors. Additionally, the team determined that the overall impact to voltage drop calculations was not adequately assessed when the temporary battery cart is used. Following identification of the issue, Exelon entered it into their corrective action program and evaluated the operability of the batteries, concluding that the affected DC components would function at the current battery capacities. The team's review of the evaluation determined it to be reasonable. The finding was more than minor because it was similar to Example 3.j of NRC IMC 0612, Appendix E, and was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because it was a design deficiency affecting the safety-related batteries that did not result in the loss of operability or functionality. The team determined this finding had a cross-cutting aspect in the area of Human Performance, (Documentation, Aspect H.7) because the battery sizing calculation was revised on March 15, 2014, which provided an opportunity to identify the inaccuracies

of the battery calculations.
Inspection Report# : 2015007 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Entry Into A High Radiation Area Without Radiological Briefing and Complying With The RWP
A self-revealing Green NCV of LGS Unit 1 technical specification 6.12.1 was identified involving improper entry of two workers into the Unit 1 reactor drywell on
March 22, 2016. Specifically, the workers entered the drywell, an area controlled as a Locked High Radiation Area, without obtaining the required access radiological conditions briefing. Further, one of the two workers entered under the control of an RWP that did not authorize access into High Radiation Areas. Exelon initiated IR 2644005, restricted the workers from further radiological controlled area access, re-configured the access area, conducted an extent of condition and human performance review, issued a site communication, and performed a staff stand down.

This finding is more than minor because it is associated with the programs and process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure adequate protection of workers from radiation exposure.

In addition, this example is similar to example 6.h of IMC 0612, Appendix E. Specifically, the workers did not receive a brief and did not review surveys prior to entering a work area with radiation levels that exceeded 100 mrem/hr at 30 cm. Using IMC 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the inspectors determined the finding was of very low safety significance (Green) because: 1) it was not an as low as is reasonably achievable (ALARA) finding, 2) there was no overexposure, 3) there was no substantial potential for an overexposure, and 4) the ability to assess dose was not compromised. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because the individuals failed to follow verbal work instructions. [H.8] (Section 2RS1)

Inspection Report# : 2016001 *(pdf)*

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Procedure for RWCU Backwashing Operations

A self-revealing Green NCV of Technical Specification (TS) 6.8.1.a, “Procedures and Programs,” occurred because Exelon failed to establish, implement, and maintain an adequate procedure for the control of radioactivity and limiting personnel exposure during operation of a solid radioactive waste system. Specifically, the procedure for the conduct of reactor water cleanup (RWCU) filter media backwashing and collection was inadequate to ensure a sufficient receiving tank volume prior to transferring waste media. On June 28, 2015, this resulted in the overflow of a Unit 2 RWCU collection tank and back up of the reactor building floor drain system, causing high levels of radioactive contamination in accessible portions of the Unit 2 reactor building, and resulting in radioactive contamination of personnel. Exelon controlled access, decontaminated affected areas and personnel, conducted bounding dose assessments, performed extent of condition reviews, and revised affected procedures to address the issue. Exelon placed this issue into the corrective action program as issue report (IR) 2520732.

This issue is more-than-minor because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, the failure to effectively control and manage radioactive material could result in significant unplanned, unintended occupational radiation exposure of workers. Using IMC 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the inspectors determined that this finding was of very low safety significance (Green) because the finding did not involve an as low as is reasonable achievable (ALARA) issue, was not an overexposure, did not result in a substantial potential for an overexposure, and did not compromise the ability to assess dose. The inspectors determined this finding has a cross-cutting aspect in the area of Human Performance, Avoiding Complacency, because Exelon did not recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes, and therefore did not implement appropriate error reduction tools. Specifically, Exelon operated the backwash receiving tank (BWRT) to routinely accept high level alarms with associated potential for system overflow. Consequently, although this mode of operation of the system was longstanding, the issue reflects present performance [H.12]. (Section 2RS1)
Inspection Report# : 2015003 *(pdf)*

Public Radiation Safety

Significance: G Mar 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Implement Procedures for Control of Potentially Contaminated Clean Systems
The inspectors identified a Green NCV of technical specification 6.8.1 because Exelon failed to implement procedure CY-AA-170-210, “Potentially Contaminated System Control Program,” for the evaluation and control of potentially cross-contaminated systems. Specifically, Exelon did not implement CY-AA-170-210 for the evaluation and control of a potentially cross-contaminated system when samples collected from the Unit 2 service air system, a non-contaminated system, indicated the potential presence of contamination on June 16, 2015. Exelon entered this issue into the corrective action program (IR 2556568), restricted use of the service air system, conducted a 10 CFR 50.59 screening and radiological evaluation of the system, conducted bounding radiation dose analyses for both occupational workers and members of the public, conducted an extent of condition review, decontaminated the system, and subsequently modified operation of the service air system to preclude re-contamination.

This finding is more-than-minor because it is associated with the program and process attributes of the occupational and public radiation safety cornerstones and adversely affected both cornerstone objectives to ensure adequate protection of worker and public health and safety from exposure to radioactive material. Specifically, during the time the service air system was contaminated but not recognized as such and not restricted in use, the potential existed to inadvertently contaminate workers and release radioactive material to the environment. Using IMC 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the inspectors determined that this finding

was of
very low safety significance (Green) because the finding did not involve an as low as is reasonably achievable (ALARA) issue, was not an overexposure, did not result in a substantial potential for an overexposure, and did not compromise the ability to assess dose. In addition, using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," the inspectors determined that the issue did not involve a substantial failure to implement the effluent release program and did not result in public doses exceeding 10 CFR 50, Appendix I or 10 CFR 20.1301 (e) and thus was of very low safety significance (Green). The inspectors determined this finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, because Exelon
did not take effective corrective actions when service air system issues were identified. [P.3] (Section 4OA3)

Inspection Report# : 2016001 *(pdf)*

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : August 29, 2016

Limerick 2
3Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2016
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Design Control of Plant Processing Computer Modification
A self-revealing finding of very low safety significance (Green) was identified when Exelon did not implement their engineering design control procedures during the plant processing computer (PPC) modification. Specifically, procedure CC-AA-103-1003, “Owner’s Acceptance Review of External Engineering Technical Products,” requires that effects on other plant systems have been addressed, and procedure CC-AA-107-1001, “Post Modification Acceptance Testing,” section 4.4.3, states that the testing boundary should encompass not only the equipment modified, but also any components whose operation may have been altered by the modification. The PPC modification had a wiring design error that resulted in the trip of both reactor recirculation pumps (RRPs) which required a manual reactor scram of Unit 2. In response to this issue, Exelon initiated IR 2676712, investigated the cause of the scram, fixed the wiring design error, performed a root cause evaluation, and performed an extent of condition review.

This issue is more than minor because it adversely affected the design control attribute of the initiating events cornerstone to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the PPC modification process had a wiring design error that resulted in the trip of both RRPs which required a manual reactor scram of Unit 2. The issue was evaluated in accordance with IMC 0609, Appendix A, "Significance Determination Process for Findings At-Power,” using Exhibit 1, "Initiating Events Screening Questions,” Section B, “Transient initiators.” The finding was determined to be of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because LGS staff did not stop when faced with uncertain conditions, and risks were not evaluated and managed before proceeding. Specifically, Exelon did not stop and reevaluate the risks and effects on plant systems when changes were made to the PPC design modification package. [H.11] (Section 4OA3)
Inspection Report# : 2016003 *(pdf)*

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Main Turbine Digital Electrohydraulic Control System Modification Failed to Revise the Plant Startup Procedure
A self-revealing Green NCV of LGS Unit 2 technical specification 6.8.1 was identified because Exelon failed to maintain a plant startup procedure. Specifically, the implementing procedure for normal plant startup from hot shutdown or cold shutdown to rated power was not maintained when a modification to the Unit 2 turbine electrohydraulic control system was performed and required changes to the plant startup procedure were not identified and implemented. Exelon initiated issue report (IR) 2602637, revised the startup procedure to properly incorporate the software changes made at the factory acceptance test, validated the software changes that were made were technically

correct, trained all operators on the new procedural changes, and reviewed operating procedures for extent of condition.

This finding is more than minor because it is associated with the procedure quality attribute of the initiating events cornerstone and affected the objective to limit the likelihood of events that upset plant stability during power operations. Specifically, the procedure directed actions intended in the software for rapid reactor depressurization that resulted in a reactor trip. Using IMC 0609, "Significance Determination Process," Appendix A, Exhibit 1, "Initiating Events Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause both a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. Specifically, although the finding caused a Level 8 trip of the feedwater pumps followed by a reactor trip, the rate of water injection from the condensate pumps was sufficient when the reactor was tripped to safely shutdown and operators were able to reset the feedwater pumps. The inspectors determined that this finding has a cross-cutting in the area of Human Performance, Change Management, because leaders did not use a systematic process for implementing the modification so that nuclear safety remained the overriding priority. [H.3] (Section 4OA3)

Inspection Report# : 2016001 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Work Staging and Housekeeping Walkdowns During Pre-Outage Preparations
The inspectors identified a Green NCV of technical specification 6.8.1 for Exelon's failure to properly control, store, and stage material in accordance with station procedures within Class I buildings during refueling outage preparation. Specifically, Exelon personnel did not secure numerous rolling carts staged in both units, did not secure welding blankets in the common pipe tunnel to prevent blocking floor drains, and did not properly build scaffolds to include engineering approval for scaffold procedure deviations. In addition, Exelon's housekeeping and material condition program did not identify and resolve these conditions through the corrective action process during a time of increased activities in the plant. Exelon restrained the carts and other rolling equipment, removed the weld blankets, and removed, reworked, and evaluated scaffolding.

This finding is more than minor because it adversely affected the protection against external factors (flood and seismic hazards) attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the loose unattended welding blankets would have blocked the pipe tunnel floor drains during an analyzed internal flooding event which would result in structural failures if not identified and corrected by operations personnel; the unrestrained carts would translate and rotate during a seismic event which could potentially impact safety related equipment and challenge the function or barrier; and the scaffold clearance and attachment issues could potentially cause impact with ductwork, cable trays, hangers, and structural supports during a seismic event. In addition, the performance deficiency is similar to the more-than-minor example described in IMC 0612, Appendix E, example 4.A, in that Exelon routinely failed to perform engineering evaluations on similar issues. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding is a deficiency affecting the design or qualification of mitigating structures, systems, and components, and the actual functions of the structures, systems, and components were maintained. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Training, because the organization did not provide sufficient training to

maintain a knowledgeable workforce with respect to proper material handling and storage, awareness of flood hazards and floor drains, and scaffolding requirements. [H.9]

Inspection Report# : 2016001 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Entry Into A High Radiation Area Without Radiological Briefing and Complying With The RWP
A self-revealing Green NCV of LGS Unit 1 technical specification 6.12.1 was identified involving improper entry of two workers into the Unit 1 reactor drywell on
March 22, 2016. Specifically, the workers entered the drywell, an area controlled as a Locked High Radiation Area, without obtaining the required access radiological conditions briefing. Further, one of the two workers entered under the control of an RWP that did not authorize access into High Radiation Areas. Exelon initiated IR 2644005, restricted the workers from further radiological controlled area access, re-configured the access area, conducted an extent of condition and human performance review, issued a site communication, and performed a staff stand down.

This finding is more than minor because it is associated with the programs and process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure adequate protection of workers from radiation exposure.

In addition, this example is similar to example 6.h of IMC 0612, Appendix E. Specifically, the workers did not receive a brief and did not review surveys prior to entering a work area with radiation levels that exceeded 100 mrem/hr at 30 cm. Using IMC 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the inspectors determined the finding was of very low safety significance (Green) because: 1) it was not an as low as is reasonably achievable (ALARA) finding, 2) there was no overexposure, 3) there was no substantial potential for an overexposure, and 4) the ability to assess dose was not compromised. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because the individuals failed to follow verbal work instructions. [H.8] (Section 2RS1)

Inspection Report# : 2016001 *(pdf)*

Public Radiation Safety

Significance: G Mar 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Implement Procedures for Control of Potentially Contaminated Clean Systems
The inspectors identified a Green NCV of technical specification 6.8.1 because Exelon failed to implement procedure CY-AA-170-210, "Potentially Contaminated System Control Program," for the evaluation and control of potentially cross-contaminated systems. Specifically, Exelon did not implement CY-AA-170-210 for the evaluation and control of a potentially cross-contaminated system when samples collected from the Unit 2 service air system, a non-contaminated system, indicated the potential presence of contamination on June 16, 2015. Exelon entered this issue into the corrective action program (IR 2556568), restricted use of the service air system, conducted a 10 CFR 50.59 screening and radiological evaluation of the system, conducted bounding radiation dose analyses for both occupational workers and members of the public, conducted an extent of condition review, decontaminated the system, and subsequently modified operation of the service air system to preclude re-contamination.

This finding is more-than-minor because it is associated with the program and process attributes of the occupational and public radiation safety cornerstones and adversely affected both cornerstone objectives to ensure adequate protection of worker and public health and safety from exposure to radioactive material. Specifically, during the time the service air system was contaminated but not recognized as such and not restricted in use, the potential existed to inadvertently contaminate workers and release radioactive material to the environment. Using IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined that this finding was of
very low safety significance (Green) because the finding did not involve an as low as is reasonably achievable (ALARA) issue, was not an overexposure, did not result in a substantial potential for an overexposure, and did not compromise the ability to assess dose. In addition, using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," the inspectors determined that the issue did not involve a substantial failure to implement the effluent release program and did not result in public doses exceeding 10 CFR 50, Appendix I or 10 CFR 20.1301 (e) and thus was of very low safety significance (Green). The inspectors determined this finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, because Exelon
did not take effective corrective actions when service air system issues were identified. [P.3] (Section 4OA3)

Inspection Report# : 2016001 *(pdf)*

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : December 08, 2016

Limerick 2
4Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2016
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Design Control of Plant Processing Computer Modification
A self-revealing finding of very low safety significance (Green) was identified when Exelon did not implement their engineering design control procedures during the plant processing computer (PPC) modification. Specifically, procedure CC-AA-103-1003, “Owner’s Acceptance Review of External Engineering Technical Products,” requires that effects on other plant systems have been addressed, and procedure CC-AA-107-1001, “Post Modification Acceptance Testing,” section 4.4.3, states that the testing boundary should encompass not only the equipment modified, but also any components whose operation may have been altered by the modification. The PPC modification had a wiring design error that resulted in the trip of both reactor recirculation pumps (RRPs) which required a manual reactor scram of Unit 2. In response to this issue, Exelon initiated IR 2676712, investigated the cause of the scram, fixed the wiring design error, performed a root cause evaluation, and performed an extent of condition review.

This issue is more than minor because it adversely affected the design control attribute of the initiating events cornerstone to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the PPC modification process had a wiring design error that resulted in the trip of both RRPs which required a manual reactor scram of Unit 2. The issue was evaluated in accordance with IMC 0609, Appendix A, "Significance Determination Process for Findings At-Power,” using Exhibit 1, "Initiating Events Screening Questions,” Section B, “Transient initiators.” The finding was determined to be of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because LGS staff did not stop when faced with uncertain conditions, and risks were not evaluated and managed before proceeding. Specifically, Exelon did not stop and reevaluate the risks and effects on plant systems when changes were made to the PPC design modification package. [H.11] (Section 4OA3)
Inspection Report# : 2016003 *(pdf)*

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Main Turbine Digital Electrohydraulic Control System Modification Failed to Revise the Plant Startup Procedure
A self-revealing Green NCV of LGS Unit 2 technical specification 6.8.1 was identified because Exelon failed to maintain a plant startup procedure. Specifically, the implementing procedure for normal plant startup from hot shutdown or cold shutdown to rated power was not maintained when a modification to the Unit 2 turbine electrohydraulic control system was performed and required changes to the plant startup procedure were not identified and implemented. Exelon initiated issue report (IR) 2602637, revised the startup procedure to properly incorporate the software changes made at the factory acceptance test, validated the software changes that were made were technically

correct, trained all operators on the new procedural changes, and reviewed operating procedures for extent of condition.

This finding is more than minor because it is associated with the procedure quality attribute of the initiating events cornerstone and affected the objective to limit the likelihood of events that upset plant stability during power operations. Specifically, the procedure directed actions intended in the software for rapid reactor depressurization that resulted in a reactor trip. Using IMC 0609, "Significance Determination Process," Appendix A, Exhibit 1, "Initiating Events Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause both a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. Specifically, although the finding caused a Level 8 trip of the feedwater pumps followed by a reactor trip, the rate of water injection from the condensate pumps was sufficient when the reactor was tripped to safely shutdown and operators were able to reset the feedwater pumps. The inspectors determined that this finding has a cross-cutting in the area of Human Performance, Change Management, because leaders did not use a systematic process for implementing the modification so that nuclear safety remained the overriding priority. [H.3] (Section 4OA3)

Inspection Report# : 2016001 *(pdf)*

Mitigating Systems

Significance:  Mar 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Work Staging and Housekeeping Walkdowns During Pre-Outage Preparations
The inspectors identified a Green NCV of technical specification 6.8.1 for Exelon's failure to properly control, store, and stage material in accordance with station procedures within Class I buildings during refueling outage preparation. Specifically, Exelon personnel did not secure numerous rolling carts staged in both units, did not secure welding blankets in the common pipe tunnel to prevent blocking floor drains, and did not properly build scaffolds to include engineering approval for scaffold procedure deviations. In addition, Exelon's housekeeping and material condition program did not identify and resolve these conditions through the corrective action process during a time of increased activities in the plant. Exelon restrained the carts and other rolling equipment, removed the weld blankets, and removed, reworked, and evaluated scaffolding.

This finding is more than minor because it adversely affected the protection against external factors (flood and seismic hazards) attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the loose unattended welding blankets would have blocked the pipe tunnel floor drains during an analyzed internal flooding event which would result in structural failures if not identified and corrected by operations personnel; the unrestrained carts would translate and rotate during a seismic event which could potentially impact safety related equipment and challenge the function or barrier; and the scaffold clearance and attachment issues could potentially cause impact with ductwork, cable trays, hangers, and structural supports during a seismic event. In addition, the performance deficiency is similar to the more-than-minor example described in IMC 0612, Appendix E, example 4.A, in that Exelon routinely failed to perform engineering evaluations on similar issues. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding is a deficiency affecting the design or qualification of mitigating structures, systems, and components, and the actual functions of the structures, systems, and components were maintained. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Training, because the organization did not provide sufficient training to

maintain a knowledgeable workforce with respect to proper material handling and storage, awareness of flood hazards and floor drains, and scaffolding requirements. [H.9]

Inspection Report# : 2016001 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Entry Into A High Radiation Area Without Radiological Briefing and Complying With The RWP
A self-revealing Green NCV of LGS Unit 1 technical specification 6.12.1 was identified involving improper entry of two workers into the Unit 1 reactor drywell on
March 22, 2016. Specifically, the workers entered the drywell, an area controlled as a Locked High Radiation Area, without obtaining the required access radiological conditions briefing. Further, one of the two workers entered under the control of an RWP that did not authorize access into High Radiation Areas. Exelon initiated IR 2644005, restricted the workers from further radiological controlled area access, re-configured the access area, conducted an extent of condition and human performance review, issued a site communication, and performed a staff stand down.

This finding is more than minor because it is associated with the programs and process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure adequate protection of workers from radiation exposure.

In addition, this example is similar to example 6.h of IMC 0612, Appendix E. Specifically, the workers did not receive a brief and did not review surveys prior to entering a work area with radiation levels that exceeded 100 mrem/hr at 30 cm. Using IMC 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the inspectors determined the finding was of very low safety significance (Green) because: 1) it was not an as low as is reasonably achievable (ALARA) finding, 2) there was no overexposure, 3) there was no substantial potential for an overexposure, and 4) the ability to assess dose was not compromised. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because the individuals failed to follow verbal work instructions. [H.8] (Section 2RS1)

Inspection Report# : 2016001 *(pdf)*

Public Radiation Safety

Significance: G Mar 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Implement Procedures for Control of Potentially Contaminated Clean Systems
The inspectors identified a Green NCV of technical specification 6.8.1 because Exelon failed to implement procedure CY-AA-170-210, "Potentially Contaminated System Control Program," for the evaluation and control of potentially cross-contaminated systems. Specifically, Exelon did not implement CY-AA-170-210 for the evaluation and control of a potentially cross-contaminated system when samples collected from the Unit 2 service air system, a non-contaminated system, indicated the potential presence of contamination on June 16, 2015. Exelon entered this issue into the corrective action program (IR 2556568), restricted use of the service air system, conducted a 10 CFR 50.59 screening and radiological evaluation of the system, conducted bounding radiation dose analyses for both occupational workers and members of the public, conducted an extent of condition review, decontaminated the system, and subsequently modified operation of the service air system to preclude re-contamination.

This finding is more-than-minor because it is associated with the program and process attributes of the occupational and public radiation safety cornerstones and adversely affected both cornerstone objectives to ensure adequate protection of worker and public health and safety from exposure to radioactive material. Specifically, during the time the service air system was contaminated but not recognized as such and not restricted in use, the potential existed to inadvertently contaminate workers and release radioactive material to the environment. Using IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined that this finding was of
very low safety significance (Green) because the finding did not involve an as low as is reasonably achievable (ALARA) issue, was not an overexposure, did not result in a substantial potential for an overexposure, and did not compromise the ability to assess dose. In addition, using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," the inspectors determined that the issue did not involve a substantial failure to implement the effluent release program and did not result in public doses exceeding 10 CFR 50, Appendix I or 10 CFR 20.1301 (e) and thus was of very low safety significance (Green). The inspectors determined this finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, because Exelon
did not take effective corrective actions when service air system issues were identified. [P.3] (Section 4OA3)

Inspection Report# : 2016001 *(pdf)*

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : February 01, 2017

Limerick 2 – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

On this page:

Initiating Events

Significance: G Sep 30, 2016
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Design Control of Plant Processing Computer Modification
A self-revealing finding of very low safety significance (Green) was identified when Exelon did not implement their engineering design control procedures during the plant processing computer (PPC) modification. Specifically, procedure CC-AA-103-1003, "Owner's Acceptance Review of External Engineering Technical Products," requires that effects on other plant systems have been addressed, and procedure CC-AA-107-1001, "Post Modification Acceptance Testing," section 4.4.3, states that the testing boundary should encompass not only the equipment modified, but also any components whose operation may have been altered by the modification. The PPC modification had a wiring design error that resulted in the trip of both reactor recirculation pumps (RRPs) which required a manual reactor scram of Unit 2. In response to this issue, Exelon initiated IR 2676712, investigated the cause of the scram, fixed the wiring design error, performed a root cause evaluation, and performed an extent of condition review.

This issue is more than minor because it adversely affected the design control attribute of the initiating events cornerstone to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the PPC modification process had a wiring design error that resulted in the trip of both RRPs which required a manual reactor scram of Unit 2. The issue was evaluated in accordance with IMC 0609, Appendix A, "Significance Determination Process for Findings At-Power," using Exhibit 1, "Initiating Events Screening Questions," Section B, "Transient initiators." The finding was determined to be of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because LGS staff did not stop when faced with uncertain conditions, and risks were not evaluated and managed before proceeding. Specifically, Exelon did not stop and reevaluate the risks and effects on plant systems when changes were made to the

PPC design modification package. [H.11] (Section 4OA3)
Inspection Report# : 2016003 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2017
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Work Instructions for Staging of Equipment and Routing of Temporary Power Cables
The inspectors identified a Green NCV of 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for Exelon's failure to establish instructions appropriate to the circumstances to properly stage equipment and route temporary power cables. Specifically, during cell replacement of the Class 1E '2A2' 125/250 volts direct current (Vdc) safeguards battery, a portable battery charger was staged adjacent to operable '2A1' battery cells and not restrained to prevent potential tipping and shorting of exposed battery cell terminals and a non-safety related extension cord was routed in near contact with exposed safety related cables in an open cable tray. Exelon moved the portable battery charger, removed and rerouted extension cords, and entered the issues into the corrective action program as issue report (IR) 3980217; IR 3980203; and IR 3983203.

This finding is more than minor because it adversely affected the configuration control attribute of the mitigating systems cornerstone to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the portable battery charger was adjacent to the '2A1' battery rack and oriented such that it was susceptible to tipping over and causing electrical shorting, and a non-safety related temporary power cable connected to a non-safety related power source was routed in near contact with safety related cables in an open cable tray which introduced a potential to damage and disable safety related equipment. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding did not represent a loss of system or function and did not represent the loss of a single train for greater than technical specification allowed outage times or greater than 24 hours. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Training, because Exelon did not provide sufficient training to maintain a knowledgeable workforce and instill nuclear safety values associated with the staging of material and equipment. [H.9] (Section 1R04)

Inspection Report# : 2017001 *(pdf)*

Significance: G Dec 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Control Structure Chiller Unit Trip Caused by Failure to Implement Procedures
A self-revealing Green NCV of LGS Units 1 and 2 technical specification 6.8.1 was identified when Exelon did not properly implement a surveillance procedure. Specifically, operators secured cooling water to the operating 'A' control structure chilled water system (CSCWS) chiller unit which resulted in the unit automatically tripping to prevent damage. Operators restored cooling water flow in accordance with procedures. Exelon entered the issue into the corrective action program as IR 2720374.

This finding is more than minor because it is associated with the human performance attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the loss of cooling water to the 'A' CSCWS chiller unit resulted in a trip of the unit on high condenser pressure and rendered the chiller unavailable. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding did not

represent a loss of system or function and did not represent the loss of a single train for greater than technical specification allowed outage times or greater than 24 hours. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, because operators did not recognize and plan for the possibility of mistakes and inherent risk and did not use appropriate error reduction tools. [H.12] (Section 4OA2)

Inspection Report# : 2016004 *(pdf)*

Barrier Integrity
Emergency Preparedness
Occupational Radiation Safety
Public Radiation Safety
Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : August 03, 2017

Page Last Reviewed/Updated Wednesday, August 10, 2016

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Limerick 2 – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

On this page:

Initiating Events

Significance: G Sep 30, 2016
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Design Control of Plant Processing Computer Modification
A self-revealing finding of very low safety significance (Green) was identified when Exelon did not implement their engineering design control procedures during the plant processing computer (PPC) modification. Specifically, procedure CC-AA-103-1003, "Owner's Acceptance Review of External Engineering Technical Products," requires that effects on other plant systems have been addressed, and procedure CC-AA-107-1001, "Post Modification Acceptance Testing," section 4.4.3, states that the testing boundary should encompass not only the equipment modified, but also any components whose operation may have been altered by the modification. The PPC modification had a wiring design error that resulted in the trip of both reactor recirculation pumps (RRPs) which required a manual reactor scram of Unit 2. In response to this issue, Exelon initiated IR 2676712, investigated the cause of the scram, fixed the wiring design error, performed a root cause evaluation, and performed an extent of condition review.

This issue is more than minor because it adversely affected the design control attribute of the initiating events cornerstone to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the PPC modification process had a wiring design error that resulted in the trip of both RRPs which required a manual reactor scram of Unit 2. The issue was evaluated in accordance with IMC 0609, Appendix A, "Significance Determination Process for Findings At-Power," using Exhibit 1, "Initiating Events Screening Questions," Section B, "Transient initiators." The finding was determined to be of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because LGS staff did not stop when faced with uncertain conditions, and risks were not evaluated and managed before proceeding. Specifically, Exelon did not stop and reevaluate the risks and effects on plant systems when changes were made to the

PPC design modification package. [H.11] (Section 4OA3)
Inspection Report# : 2016003 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2017
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Work Instructions for Staging of Equipment and Routing of Temporary Power Cables
The inspectors identified a Green NCV of 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for Exelon's failure to establish instructions appropriate to the circumstances to properly stage equipment and route temporary power cables. Specifically, during cell replacement of the Class 1E '2A2' 125/250 volts direct current (Vdc) safeguards battery, a portable battery charger was staged adjacent to operable '2A1' battery cells and not restrained to prevent potential tipping and shorting of exposed battery cell terminals and a non-safety related extension cord was routed in near contact with exposed safety related cables in an open cable tray. Exelon moved the portable battery charger, removed and rerouted extension cords, and entered the issues into the corrective action program as issue report (IR) 3980217; IR 3980203; and IR 3983203.

This finding is more than minor because it adversely affected the configuration control attribute of the mitigating systems cornerstone to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the portable battery charger was adjacent to the '2A1' battery rack and oriented such that it was susceptible to tipping over and causing electrical shorting, and a non-safety related temporary power cable connected to a non-safety related power source was routed in near contact with safety related cables in an open cable tray which introduced a potential to damage and disable safety related equipment. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding did not represent a loss of system or function and did not represent the loss of a single train for greater than technical specification allowed outage times or greater than 24 hours. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Training, because Exelon did not provide sufficient training to maintain a knowledgeable workforce and instill nuclear safety values associated with the staging of material and equipment. [H.9] (Section 1R04)

Inspection Report# : 2017001 *(pdf)*

Significance: G Dec 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Control Structure Chiller Unit Trip Caused by Failure to Implement Procedures
A self-revealing Green NCV of LGS Units 1 and 2 technical specification 6.8.1 was identified when Exelon did not properly implement a surveillance procedure. Specifically, operators secured cooling water to the operating 'A' control structure chilled water system (CSCWS) chiller unit which resulted in the unit automatically tripping to prevent damage. Operators restored cooling water flow in accordance with procedures. Exelon entered the issue into the corrective action program as IR 2720374.

This finding is more than minor because it is associated with the human performance attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the loss of cooling water to the 'A' CSCWS chiller unit resulted in a trip of the unit on high condenser pressure and rendered the chiller unavailable. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding did not

represent a loss of system or function and did not represent the loss of a single train for greater than technical specification allowed outage times or greater than 24 hours. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, because operators did not recognize and plan for the possibility of mistakes and inherent risk and did not use appropriate error reduction tools. [H.12] (Section 4OA2)

Inspection Report# : 2016004 *(pdf)*

Barrier Integrity

Significance: G Jun 30, 2017
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Inadequate Design Control of the Drywell Unit Cooler Condensate Flow Rate Monitoring System
A self-revealing Green NCV of 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion III, "Design Control," occurred when Exelon failed to verify or check the adequacy of design of a new Unit 2 drywell unit cooler condensate flow rate monitoring system. Specifically, the design did not identify that the low conductivity of the drain fluid affected the ability of the flow elements to accurately detect drain flow. In addition to this, LGS staff did not assure adequate post modification acceptance testing in accordance with CC-AA-107-1001, "Post Modification Acceptance Testing." This inadequately designed and tested modification also resulted in a violation of technical specification (TS) 3.4.3.1, "Leakage Detection Systems," because the system was inoperable and unavailable to perform its function following the Unit 2 April 2015 refueling outage, and the TS 3.4.3.1 action statement was not met until the system was declared inoperable on December 10, 2015. In response to this issue, Exelon initiated a condition report, IR 2598308, performed an apparent cause investigation, and replaced the Rosemount drywell unit cooler condensate flow rate monitoring system with a modified version of the previously used system.

The inspectors determined that the failure to verify the adequacy of the newly installed Rosemount drywell unit cooler condensate flow rate monitoring was within Exelon's ability to foresee and correct and should have been prevented and therefore was a performance deficiency. This issue is more than minor because it adversely affected the design control attribute of the barrier integrity cornerstone to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the Unit 2 drywell unit cooler condensate flow rate monitoring system was inoperable and unavailable to perform its function as part of the reactor coolant leakage detection system following the Unit 2 April 2015 refueling outage. This issue was evaluated in accordance with IMC 0609, Appendix A, "Significance Determination Process for Findings At-Power," using Exhibit 3, "Barrier Integrity Screening Questions," Section B, "Reactor Containment." The finding was determined to be of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of the reactor containment and did not involve an actual reduction in function of hydrogen igniters in the reactor containment. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Conservative Bias, because LGS staff made inappropriate decisions based on informal vendor input and a successful implementation of the modification at another facility. [H.14] (Section 4OA3)

Inspection Report# : 2017002 *(pdf)*

Emergency Preparedness
Occupational Radiation Safety
Public Radiation Safety
Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The

Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : September 05, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Limerick 2 – Quarterly Plant Inspection Findings

3Q/2017 – Plant Inspection Findings

On this page:

Initiating Events

Mitigating Systems

Significance: G Mar 31, 2017
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Work Instructions for Staging of Equipment and Routing of Temporary Power Cables
The inspectors identified a Green NCV of 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for Exelon's failure to establish instructions appropriate to the circumstances to properly stage equipment and route temporary power cables. Specifically, during cell replacement of the Class 1E '2A2' 125/250 volts direct current (Vdc) safeguards battery, a portable battery charger was staged adjacent to operable '2A1' battery cells and not restrained to prevent potential tipping and shorting of exposed battery cell terminals and a non-safety related extension cord was routed in near contact with exposed safety related cables in an open cable tray. Exelon moved the portable battery charger, removed and rerouted extension cords, and entered the issues into the corrective action program as issue report (IR) 3980217; IR 3980203; and IR 3983203.

This finding is more than minor because it adversely affected the configuration control attribute of the mitigating systems cornerstone to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the portable battery charger was adjacent to the '2A1' battery rack and oriented such that it was susceptible to tipping over and causing electrical shorting, and a non-safety related temporary power cable connected to a non-safety related power source was routed in near contact with safety related cables in an open cable tray which introduced a potential to damage and disable safety related equipment. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding did not represent a loss of system or function and did not represent the loss of a single train for greater than technical specification allowed outage times or greater than 24 hours. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Training, because Exelon did not provide sufficient training to maintain a knowledgeable workforce and instill nuclear safety values associated with the staging

of material and equipment. [H.9] (Section 1R04)

Inspection Report# : 2017001 *(pdf)*

Significance: G Dec 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Control Structure Chiller Unit Trip Caused by Failure to Implement Procedures
A self-revealing Green NCV of LGS Units 1 and 2 technical specification 6.8.1 was identified when Exelon did not properly implement a surveillance procedure. Specifically, operators secured cooling water to the operating 'A' control structure chilled water system (CSCWS) chiller unit which resulted in the unit automatically tripping to prevent damage. Operators restored cooling water flow in accordance with procedures. Exelon entered the issue into the corrective action program as IR 2720374.

This finding is more than minor because it is associated with the human performance attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the loss of cooling water to the 'A' CSCWS chiller unit resulted in a trip of the unit on high condenser pressure and rendered the chiller unavailable. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding did not represent a loss of system or function and did not represent the loss of a single train for greater than technical specification allowed outage times or greater than 24 hours. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, because operators did not recognize and plan for the possibility of mistakes and inherent risk and did not use appropriate error reduction tools. [H.12] (Section 4OA2)

Inspection Report# : 2016004 *(pdf)*

Barrier Integrity

Significance: G Jul 31, 2017
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Inadequate Design Control of the Drywell Unit Cooler Condensate Flow Rate Monitoring System
A self-revealing Green NCV of 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion III, 'Design Control,' occurred when Exelon failed to verify or check the adequacy of design of a new Unit 2 drywell unit cooler condensate flow rate monitoring system. Specifically, the design did not identify that the low conductivity of the drain fluid affected the ability of the flow elements to accurately detect drain flow. In addition to this, LGS staff did not assure adequate post modification acceptance testing in accordance with CC-AA-107-1001, 'Post Modification Acceptance Testing.' This inadequately designed and tested modification also resulted in a violation of technical specification (TS) 3.4.3.1, 'Leakage Detection Systems,' because the system was inoperable and unavailable to perform its function following the Unit 2 April 2015 refueling outage, and the TS 3.4.3.1 action statement was not met until the system was declared inoperable on December 10, 2015. In response to this issue, Exelon initiated a condition report, IR 2598308, performed an apparent cause investigation, and replaced the Rosemount drywell unit cooler condensate flow rate monitoring system with a modified version of the previously used system.

The inspectors determined that the failure to verify the adequacy of the newly installed Rosemount drywell unit cooler condensate flow rate monitoring was within Exelons ability to foresee and correct and should have been prevented and therefore was a performance deficiency. This issue is more than minor because it adversely affected the design control

attribute of the barrier integrity cornerstone to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the Unit 2 drywell unit cooler condensate flow rate monitoring system was inoperable and unavailable to perform its function as part of the reactor coolant leakage detection system following
Inspection Report# : 2017002 *(pdf)*

Emergency Preparedness
Occupational Radiation Safety
Public Radiation Safety
Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : November 29, 2017

Page Last Reviewed/Updated Monday, November 06, 2017

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Limerick 2 – Quarterly Plant Inspection Findings

4Q/2017 – Plant Inspection Findings

On this page:

Initiating Events

Mitigating Systems

Significance: G May 11, 2017
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Work Instructions for Staging of Equipment and Routing of Temporary Power Cables
The inspectors identified a Green NCV of 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for Exelon's failure to establish instructions appropriate to the circumstances to properly stage equipment and route temporary power cables. Specifically, during cell replacement of the Class 1E '2A2' 125/250 volts direct current (Vdc) safeguards battery, a portable battery charger was staged adjacent to operable '2A1' battery cells and not restrained to prevent potential tipping and shorting of exposed battery cell terminals and a non-safety related extension cord was routed in near contact with exposed safety related cables in an open cable tray. Exelon moved the portable battery charger, removed and rerouted extension cords, and entered the issues into the corrective action program as issue report (IR) 3980217; IR 3980203; and IR 3983203.

This finding is more than minor because it adversely affected the configuration control attribute of the mitigating systems cornerstone to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the portable battery charger was adjacent to the '2A1' battery rack and oriented such that it was susceptible to tipping over and causing electrical shorting, and a non-safety related temporary power cable connected to a non-safety related power source was routed in near contact with safety related cables in an open cable tray which introduced a potential to damage and disable safety related equipment. Using IMC 0609, Appendix A, Exhibit 2, the inspectors determined that this finding was of very low safety significance (Green). Specifically, the finding did not represent a loss of system or function and did not represent the loss of a single train for greater than technical specification allowed outage times or greater than 24 hours. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Training, because Exelon did not provide sufficient training to maintain a knowledgeable workforce and instill nuclear safety values associated with the staging

of material and equipment. [H.9] (Section 1R04)

Inspection Report# : 2017001 *(pdf)*

Barrier Integrity

Significance: G Jul 31, 2017
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Inadequate Design Control of the Drywell Unit Cooler Condensate Flow Rate Monitoring System
A self-revealing Green NCV of 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion III, "Design Control," occurred when Exelon failed to verify or check the adequacy of design of a new Unit 2 drywell unit cooler condensate flow rate monitoring system. Specifically, the design did not identify that the low conductivity of the drain fluid affected the ability of the flow elements to accurately detect drain flow. In addition to this, LGS staff did not assure adequate post modification acceptance testing in accordance with CC-AA-107-1001, "Post Modification Acceptance Testing." This inadequately designed and tested modification also resulted in a violation of technical specification (TS) 3.4.3.1, "Leakage Detection Systems," because the system was inoperable and unavailable to perform its function following the Unit 2 April 2015 refueling outage, and the TS 3.4.3.1 action statement was not met until the system was declared inoperable on December 10, 2015. In response to this issue, Exelon initiated a condition report, IR 2598308, performed an apparent cause investigation, and replaced the Rosemount drywell unit cooler condensate flow rate monitoring system with a modified version of the previously used system.

The inspectors determined that the failure to verify the adequacy of the newly installed Rosemount drywell unit cooler condensate flow rate monitoring was within Exelon's ability to foresee and correct and should have been prevented and therefore was a performance deficiency. This issue is more than minor because it adversely affected the design control attribute of the barrier integrity cornerstone to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the Unit 2 drywell unit cooler condensate flow rate monitoring system was inoperable and unavailable to perform its function as part of the reactor coolant leakage detection system following the Unit 2 April 2015 refueling outage. This issue was evaluated in accordance with IMC 0609, Appendix A, "Significance Determination Process for Findings At-Power," using Exhibit 3, "Barrier Integrity Screening Questions," Section B, "Reactor Containment." The finding was determined to be of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of the reactor containment and did not involve an actual reduction in function of hydrogen igniters in the reactor containment. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Conservative Bias, because LGS staff made inappropriate decisions based on informal vendor input and a successful implementation of the modification at another facility. [H.14] (Section 4OA3)

Inspection Report# : 2017002 *(pdf)*

Emergency Preparedness
Occupational Radiation Safety
Public Radiation Safety
Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security

inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : February 01, 2018

Page Last Reviewed/Updated Monday, November 06, 2017