Quad Cities 1
4Q/2007 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO HAVE ADEQUATE PROCEDURES AND USE HUMAN PERFORMANCE TOOLS RESULTS IN REACTOR WATER CLEANUP ISOLATION
A self-revealing finding and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, was identified on August 22, 2007. The finding occurred due to the failure to have instructions and procedures appropriate to the circumstance for performing valve operation test and evaluation systems (VOTES) testing on a high pressure coolant injection valve. This contributed to the unexpected isolation of the Unit 1 reactor water cleanup system due to keying a hand held radio during the VOTES test. Corrective actions for this issue included restoring the reactor water cleanup system, performing training on radio use, briefing personnel on the event, and updating other VOTES testing work instructions to ensure that the presence of a radio-free zone was clearly specified.

This issue was more than minor because, if left uncorrected, the continued use of inadequate procedures would lead to additional initiating events and equipment isolations. This issue was of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigating systems equipment would not be available. The inspectors concluded that this finding was cross-cutting in the area of Human Performance, Work Practices, Human Error Prevention because the licensee's human error prevention techniques were not used to ensure that the work activities were performed safely.
Inspection Report# : 2007004 *(pdf)*

Significance: G Jun 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
UNQUALIFIED TARGET ROCK VALVE REPAIR
On May 7, 2007, the inspectors identified a finding, and a Non-Cited Violation of 10 CFR 50.55a(g)4, for the failure to complete Code qualified weld repairs for Main Steam Safety Relief Valve 1-0203-3A. Specifically, the weld procedures for this repair were not qualified by performing tensile and guided bend tests intended to demonstrate that the weld procedure produced welds with satisfactory strength and ductility for the intended service. Without these tests, the inspectors were concerned that these Non-Code conforming weld repairs affecting the pressure boundary could lead to cracking and failure of the valve body or bellows when the valve was placed in service. Corrective actions for this issue included performing an operability evaluation and entering this issue into the corrective action program.

This finding was more than minor because it could be reasonably viewed as a precursor to a significant event. In addition, the finding was associated with the equipment performance attribute of the initiating events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions. Absent NRC intervention, the licensee would have relied on unqualified weld repairs on 1-0203-3A for an indefinite period of service, which may have placed the reactor coolant pressure boundary at increased risk for weld failure resulting in leakage, or an inoperable relief valve. The inspectors determined that this finding was of very low safety significance because it was identified prior to repressurizing the plant following the refueling outage.
Inspection Report# : 2007003 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
DOCUMENTATION ISSUES RESULT IN UNEXPECTED SAFETY-RELATED VALVE LEAKAGE
A self-revealing finding and Non-Cited Violation of Technical Specification 5.4.1 was identified due to the failure to properly preplan and perform maintenance on safety-related equipment in May 2007. This failure resulted in unexpected leakage on two safety-related valves. Corrective actions for this issue included repairing the valves, revising the maintenance procedures to ensure they complied with procedural requirements, and providing additional training to maintenance and maintenance planning personnel on the planning and performing of maintenance activities.

The inspectors determined that this issue was more than minor because, if left uncorrected, the failure to properly pre-plan and perform safety-related maintenance would lead to the continued degradation of equipment important to safety. This finding was of very low safety significance because the leakage did not result in the total loss of safety function for the main steam, high pressure coolant injection, or the containment isolation systems. The inspectors determined that this finding was cross-cutting in the area of Human Performance, Resources, Documentation because the licensee failed to have complete, accurate, and up to date procedures for performing safety-related maintenance.
Inspection Report# : 2007004 *(pdf)*

Significance: G Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROMPTLY CORRECT MARCH 2007 1D RESIDUAL HEAT REMOVAL PUMP BREAKER FAILURE
A self-revealing finding and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, was identified in September 2007 for the failure to identify and correct a condition adverse to quality. Specifically, the licensee failed to assure that the cause of the March 2007 failure of the 1D residual heat removal pump breaker was promptly identified and corrected. This resulted in an additional 1D residual heat removal pump breaker failure in May 2007. Corrective actions for this issue included performing an extent of condition review and modifying all of the Unit 1 Merlin Gerin breakers and cubicles. At the conclusion of the inspection period, 17 of the 47 Unit 2 breaker cubicles had also been modified. The remainder will be modified during the next Unit 2 refueling outage.

This issue was more than minor because, if left uncorrected, the failure of safety-related breakers would continue to result in the inoperability of risk significant equipment. This finding was of very low safety significance because it was not a design deficiency, did not result in the total loss of a safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding was determined to be cross-cutting in the area of Problem Identification and Resolution, Corrective Action Program, Evaluation, because the licensee failed to thoroughly evaluate the March 2007 breaker failure to ensure that the resolution addressed the cause and extent of condition.
Inspection Report# : 2007004 *(pdf)*

Significance: SL-IV Sep 07, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate 10 CFR 50.59 Evaluations for the Main Steam Line Tunnel High Temperature Instrumentation and the Electrohydraulic Control System Pressure Regulator
The inspectors identified a Severity Level IV NCV of 10 CFR 50.59(d)(1) for the licensee's failure to perform an adequate 10 CFR 50.59 evaluation for bypassing a channel of the Main Steam Line (MSL) tunnel high temperature instrumentation and for the failure to perform an adequate 10 CFR 50.59 evaluation for changing the license basis to allow operating the Electrohydraulic Control (EHC) System pressure regulator with only one channel in service. Even though the licensee did not intend to operate the plant permanently with a channel of the MSL tunnel high temperature bypassed or with only one EHC pressure regulator channel, the 10 CFR 50.59 evaluations that were performed allowed it. Because of this, the inspection team could not reasonably determine that these changes would not have required a license amendment, because the bypassing of the MSL tunnel high temperature channel could have resulted in more than a minimal increase in the likelihood of a malfunction of a structure, system, or component important to safety. Additionally, the change to allow operating the EHC System pressure regulator with only one channel in

service could have created a possibility of a malfunction of an SSC important to safety with a different result. This issue was entered into the licensee's corrective action program.

Because the issue potentially impacted the NRC's ability to perform its regulatory function, this finding was evaluated using the traditional enforcement process. The finding was determined to be more than minor because the inspectors could not reasonably determine that these 10 CFR 50.59 evaluations would not have ultimately required NRC prior approval. The inspectors evaluated the finding using Inspection Manual Chapter (IMC) 0609, Appendix A, Phase 1 screening for the mitigating systems cornerstone and determined that the finding was of very low safety significance because they were able to answer "no" to the Mitigating Systems screening questions in the Phase 1 Screening Worksheet. Specifically, while the licensee failed to perform an adequate 10 CFR 50.59 evaluation for bypassing a channel of the MSL tunnel high temperature instrumentation and for allowing operation of the EHC System pressure regulator with only one channel in service, the licensee would have been able to perform these same actions under the NRC Part 9900 Technical Guidance for Degraded or Nonconforming Conditions.
Inspection Report# : 2007008 *(pdf)*

Significance: G Sep 07, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Account for Delays in ECCS MOV's Due to Voltage Dips during Load Sequencing
The inspections identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," that was of very low safety significance. Specifically, Motor Operated Valve (MOV) delays caused by voltage dips during load sequencing were not translated into and accounted for in the design basis for the In-Service Testing (IST) stroke time acceptance criteria for the Residual Heat Removal (RHR) system inboard and outboard shutoff valves and two core spray inboard isolation valves. This issue was entered into the licensee's corrective action program.

The issue was more than minor because it was associated with the Mitigating System Cornerstone attribute of "Design Control," and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the MOV delays caused by voltage dips during Emergency Core Cooling System (ECCS) load sequencing were not accounted for in the licensee's design basis. This introduced non-conservativisms in the margins for MOV IST acceptance criteria and also potentially for the acceptance criteria themselves. This finding was of very low safety significance, because the inspectors answered "no" to all five questions under the Mitigating Systems Cornerstone column of the Phase 1 worksheet. Specifically, even though the MOV delays were non-conservative, the actual MOV stroke times during the most recent IST testing for the valves in question were much less than the IST acceptance criteria
Inspection Report# : 2007008 *(pdf)*

Significance: G Jun 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ADEQUATELY IMPLEMENT DRYWELL CLOSEOUT PROCEDURE
The inspectors identified a finding of very low safety significance, and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, due to the failure to effectively implement QCOS 1600-32, "Drywell/Torus Closeout," in May 2007. Corrective actions for this issue included removing the NRC identified debris from the drywell, informing personnel of the ineffective drywell cleaning, and conducting an assessment to determine more effective methods for cleaning the drywell during future outages.

This finding was more than minor because, if left uncorrected, it would result in the continued accumulation of foreign material in the drywell. The accumulation of materials could result in blocking the emergency core cooling system suction strainers, drywell ventilation equipment, drain lines, or motor vents during normal operation or accident conditions. This finding was of very low safety significance since the debris did not result in an actual loss of safety function for any system and because the debris was removed when it was found. The inspectors concluded that this finding was cross-cutting in the area of problem identification and resolution, corrective action program (P.1(d)), in that the licensee failed to ensure that corrective actions were taken to address a previously identified adverse trend.
Inspection Report# : 2007003 *(pdf)*

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: FIN Finding
INADQUATE OVERSIGHT AND PERFORMANCE OF TRAINING RESULTS IN TRIPPING AN OPERATING CONTROL ROOM FAN
A self-revealed finding was identified on January 1, 2007, when an initial license trainee tripped the "A" control room ventilation system during a training evolution. The inspectors determined that inadequate oversight of the training evolution by the task performance evaluator contributed to this issue. No violation of NRC requirements was identified because the "A" control room ventilation system was non-safety related.

The failure to perform and provide appropriate oversight of training activities was determined to be more than minor because, if left uncorrected, it would lead to the unexpected shut down of other risk significant equipment and the performance of negative training. This finding was of very low safety significance because it did not represent a degradation of the control room radiological barrier, a degradation of the control room smoke or toxic gas barrier, or an actual open pathway in the reactor containment. The inspectors determined that this finding was cross-cutting in the area of Human Performance, Work Practices, because the licensee failed to ensure that the supervisory and management oversight of work activities was appropriate to ensure that nuclear safety was supported.
Inspection Report# : 2007002 *(pdf)*

Barrier Integrity

Significance: G Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW PROCEDURES AND USE HUMAN PERFORMANCE TOOLS RESULTS IN REACTOR BUILDING VENTILATION ISOLATION
A self-revealing finding and a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, was identified on September 8, 2007, due to the failure to follow procedures during the performance of Unit 1 125 Vdc ground detection activities. The failure to follow procedures resulted in the inadvertent isolation of the Unit 2 reactor building ventilation system. Corrective actions for this issue included restoring the isolated plant equipment, briefing personnel on the event, revising the ground detection procedure to ensure consistency with other Exelon stations, requiring additional oversight of ground detection activities, and implementing additional human performance improvement initiatives.

The inspectors determined that this issue was more than minor because if left uncorrected, it would lead to additional equipment issues. The inspectors determined that this issue was of very low safety significance because it did not represent a degradation of a radiological barrier provided by the standby gas treatment system, did not represent a degradation of the barrier function of the control room ventilation system against smoke or a toxic atmosphere, and did not represent an actual open pathway in the physical integrity of the reactor containment. The inspectors concluded that this finding was cross-cutting in the area of Human Performance, Work Practices, Human Error Prevention because the licensee's human error prevention techniques were not used to ensure that the work activity was performed safely.
Inspection Report# : 2007004 *(pdf)*

Significance: G Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE CLEARANCE ORDER RESULTS IN FUEL POOL COOLING PUMP TRIP
A self-revealing finding and Non-Cited Violation of Technical Specification 5.4.1 was identified on July 30, 2007, due to the failure to properly implement OP-AA-109-101, "Clearance and Tagging." This failure resulted in tripping the 1A fuel pool cooling pump during clearance and tagging activities. Corrective actions for this issue included restoring the fuel pool cooling system to normal operation, establishing a clearance order review board to thoroughly

review clearance orders, holding training sessions to ensure that the clearance order writers clearly understood that each clearance order step should contain only one equipment manipulation, and implementing additional actions to improve Operations Department performance.

This issue was more than minor because, if left uncorrected, the failure to properly implement the clearance and tagging program would become a more significant safety concern. The inspectors determined that this finding was of very low safety significance because the finding only represented a degradation of the radiological barrier provided by the spent fuel pool. The inspectors concluded that this finding was cross-cutting in the area of Human Performance, Resources, Documentation in that operations personnel did not ensure that Clearance Order 55101 was complete and accurate prior to use.
Inspection Report# : 2007004 *(pdf)*

Emergency Preparedness

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO COMPLETE HYDROSTATIC TESTS ON ALL SCBA AIR BOTTLES AT PROCEDURAL REQUIRED INTERVALS
The inspectors identified a Green finding and a Non-Cited Violation of NRC requirements on February 8, 2007, due to the licensee's failure to complete hydrostatic tests on multiple self-contained breathing apparatus (SCBA) air bottles at the required frequency. The inspectors determined that approximately 12 percent of the in-service emergency response related SCBA air bottles had not been tested within the previous 3-year period as required by licensee procedures.

The issue was more than minor because it was associated with the facilities/equipment attribute of the Emergency Preparedness Cornerstone. The finding also affected the cornerstone objective of ensuring the licensee was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors determined that the issue resulted in a failure to comply with 10 CFR 50.54(q) and the Emergency Plan requirements associated with one of the Planning Standards in 10 CFR 50.47(b). The issue also represented a degradation of the emergency worker protection portion of the Planning Standard provided in 10 CFR 50.47(b)(10) that involved more than an isolated, small percentage of the licensee's SCBA equipment. Since the finding did not represent a functional failure of the Planning Standard, the finding was determined to be of very low safety significance. This finding was also cross-cutting in the area of Human Performance, Resources, because the principal cause of the problem was the lack of an adequate procedure and process to ensure that SCBA bottles were tested at the proper frequency and tracked in the licensee's inventory. Corrective actions for this issue included hydrostatic testing of the affected bottles, verification that all other SCBA bottle hydrostatic tests were current, expanding the SCBA bottle monthly inspection requirements, and plans to re-evaluate the process used to introduce newly acquired SCBA equipment into the licensee's inventory.
Inspection Report# : 2007002 *(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 : February 04, 2008