Quad Cities 2
2Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW CLEARANCE ORDER INSTRUCTIONS
A finding of very low safety significance and associated non-citied violation of Technical Specifications 5.4.1.a, "Procedures," was self-revealed on March 13, 2013, when operators placing a clearance on the Unit 1 analog trip system de-energized the Unit 2 analog trip system resulting in a Unit 2 half-scram. The operators that opened the wrong breaker did not follow the instructions in the clearance order brief as required by OP AA 109-101, "Clearance and Tagging," and misidentified the inverter on the south wall of the cable spreading room as the Unit 1 analog trip system inverter when it was actually the Unit 2 inverter. The operators did not use the concurrent verification techniques specified in the pre-job briefing for ensuring that the inverter was the correct component to be manipulated, and did not implement the clearance order as written. Immediate actions taken were removal of the implementing operators' qualifications and briefing to all operating personnel.
Inspectors determined that the issue was more than minor because it adversely affected the Reactor Safety Initiating Events Cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. The performance deficiency challenged the configuration control attribute of the objective for operating equipment lineups. The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors answered all questions of Exhibit 1, "Initiating Events Screening Questions," for transient initiators and support system initiators. Questions in both categories were answered "No," and the finding screened as very low safety significance, or Green. Inspectors determined that a significant contributor to this finding was the failure of the operator performing breaker manipulation to verify the component label matched the clearance checklist and card in accordance with the site standard, HU-AA-101, Human Performance Tools and Verification Practices. As a result, inspectors identified that this issue had a cross-cutting aspect in the area of Human Performance - Work Practices for failure to use the human performance techniques to ensure that the work tasks are performed safely and individuals do not proceed in the face of uncertainty (H.4(a)).

Inspection Report# : 2013002 *(pdf)*

Significance: G Aug 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
CAPR NOT COMPLETED
A finding of very low safety significance (Green) and associated NCV of 10 CFR 50, Appendix B, Criterion II, "Quality Assurance Program" was identified by the inspectors when they determined that a licensee-specified corrective action to prevent recurrence (CAPR) of a significant event was not completed as required by a quality assurance program implementing procedure, LS-AA-125, "Corrective Action Program (CAP) Procedure." Inspectors determined that the failure to complete the CAPR and install auxiliary contactors that had undergone enhanced testing (designated PQI testing in the licensee's documentation) before installation was a performance deficiency entered into the licensee's CAP as IR 1409378. Immediate corrective actions included performing a functional evaluation of

installed components and quarantine of remaining spare parts.
This finding was more than minor because the CAPR established criteria that should have prevented installation of the parts until testing was performed, but the parts were installed in the plant and the components were returned to service, thus impacting the reactor safety, initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations.
Inspectors performed a SDP Phase 1 screening using
IMC 0609 Attachment 4 and Appendix A Exhibit 1, Initiating Events Screening Questions," and answered all of the questions, "No." Therefore, the finding screened as very low safety significance or Green. The inspectors identified that this finding has a cross-cutting aspect in the area of Human Performance – Work Practices, in that, licensee personnel did not follow procedures (H.4(b)). Inspectors determined that the primary contributor to this finding was that procurement personnel did not follow procedure SM-AC-3019, "Parts Quality Process," which stated in Attachment 6 that "the station shall inform the test facility of any unique or special test requirements for the equipment. Otherwise, Exelon PowerLabs will apply standard PQI testing criteria for the item." Procurement personnel did not identify the enhanced PQI testing requirement to PowerLabs when the part was sent for testing.

Inspection Report# : 2012007 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
CALCULATION ASSUMPTIONS NOT TRANSLATED IN TO OPERATING PROCEDURES
A finding of very low safety significance and associated non-citied violation (NCV) of 10 CFR Appendix B, Criterion III, "Design Control," was identified by the inspectors for the licensee's failure to translate design requirements into procedures to ensure availability of the ultimate heat sink (UHS) in a loss of lock event. Specifically, the licensee failed to translate the need to minimize diesel generator cooling water (DGCW) flow as assumed in the design calculation into station operating procedures. In response to the inspectors' concerns, the licensee initiated actions to verify the required flow of the DGCW system and assessed operability. Because the existing river temperature was significantly lower than 95°F (the assumed initial temperature), the licensee concluded the UHS was capable of performing its function. This violation was entered into the licensee's corrective action program as issue report 1416634.
The inspectors determined the performance deficiency was more than minor because operating procedures did not require throttling of the DGCW flow or guidance if an emergency diesel generator was operating following a lock failure resulting from a barge colliding into the lock structure. The lack of guidance resulted in an increased heat load and resulted in reasonable doubt the UHS would remain below 108°F. The inspectors evaluated the finding using IMC 0609, Exhibit 4, "External Events Screening Questions," and answered "no" to all of the applicable questions. Subsequent calculations by the licensee indicated the maximum flow would not challenge the maximum design temperature limits for the UHS. Therefore, the finding screened as of very low safety significance (Green). The inspectors determined the cause of this finding did not represent current licensee performance and, thus, no cross-cutting aspect was assigned.
Inspection Report# : 2013003 *(pdf)*

Significance: G May 17, 2013
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Translate Design Basis Into Toxic Chemical Response Procedures
A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the licensee's failure to translate the design basis correctly into procedures and instructions for the operators. Specifically, the licensee did not update procedures and instructions to ensure that operators would don respirators within two minutes of detection of a toxic chemical, ammonia, as determined in a calculation. The licensee entered the issue into their corrective action program and planned to revise the calculation using detection of odor as an entry condition for donning of respirator protection and update the operating procedures accordingly.

The finding was determined to be more than minor because the failure to provide procedures or instructions to operators to don respirators could result in the operators becoming incapacitated and not being able to respond to an accident or event that had a possibility of radionuclide releases. The finding was determined to be of very low safety significance (Green) due to the low probability of an ammonia release associated with a barge accident. The finding had a cross-cutting aspect in the area of human performance, work control, because the licensee's engineering organization did not coordinate with the operations organization on the need to don respirators within two minutes of detection of ammonia gas following a postulated toxic chemical accident.
Inspection Report# : 2013007 *(pdf)*

Significance: G Mar 31, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
DIESEL GENERATOR COOLING WATER PUMP ALIGNED TO WRONG UNIT
A finding of very low safety significance and associated non-citied violation
of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed on March 1, 2013, during restoration from the 1B core spray logic test, when the 1/2 diesel generator cooling water pump (DGCWP) was discovered to have been lined up to Unit 2 emergency core cooling system room coolers instead of Unit 1 coolers as expected. The operators that had performed the initial valve manipulations on February 28, 2013, did not complete the alignment as required by QCOP 6600-15, "1/2 Diesel Generator Cooling Water Pump Cross Connect Alignment." Specifically, the operators executing QCOP 6600-15 did not follow the procedure for aligning the Unit 1/2 DGCWP to supply the Unit 1 emergency core cooling system room coolers. The issue was entered into the licensee's CAP as Issue Report 1486754, and the licensee restored operability of the Unit 1 DGCW pump to restore compliance. Standdown briefings were conducted for all station operators to discuss the event lesson learned, and performance management actions were implemented for the operators involved in the event.
This issue was more than minor because it adversely affected the Reactor Safety Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences in that failure to align cooling water per the procedure adversely impacted the cornerstone attribute of Configuration Control for operating plant equipment lineups. Specifically, the as-left equipment lineup was different than that reported to the main control room when the activity was completed. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609 Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors answered all questions of Exhibit 2, "Mitigating Systems Screening Questions," Section A - Mitigating SSCs and Functionality (Except Reactivity Control Systems) "No," and therefore, the finding screened as Green or very low safety significance. This finding has a cross-cutting aspect in the area of Human Performance - Work Practices because the licensee personnel did not use human performance tools and techniques to ensure proper execution of the task (H.4(a)).

Inspection Report# : 2013002 *(pdf)*

Significance: G Dec 31, 2012
Identified By: NRC

Item Type: NCV NonCited Violation
DIESEL GENERATOR TECHNICAL SPECIFICATION FREQUENCY AND VOLTAGE VARIATION NOT CONSIDERED IN LOADING CALCULATIONS
The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to verify and ensure that operating the emergency diesel generators (EDGs) at the limits of voltage and frequency, allowed by Technical Specification (TS) 3.8.1.2, would not affect the safety related components. Specifically, the license failed to ensure the EDGs, operating under any combination of allowed voltage and frequency, would not be loaded in excess of the licensed limit and would not cause supplied components to become inoperable. The licensee entered the issue into the corrective action program (CAP) as Issue Report (IR) 01288784, "CDBI – Technical Specification Limits for EDG," and restricted EDG operation to near the midpoint of the allowed TS range during any potential event until the licensee demonstrates operability over the full TS range.
The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the design control attribute was adversely affected because the licensee failed to ensure the TS allowed operating band for EDG frequency and voltage could not affect the operability and reliability of mitigating system components. Based on a Phase 3 internal events SDP evaluation performed by a regional senior reactor analyst, the inspectors determined the finding was of very low safety significance (Green). No cross-cutting aspect was assigned since the analysis was last performed in May of 2007 and is not necessarily reflective of current performance.

Inspection Report# : 2012005 *(pdf)*

Significance:  Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW SURVEILLANCE PROCEDURE
A self-revealed finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedure, and Drawings," were identified on October 25, 2012, when the operator performing the Unit 2 EDG surveillance test failed to follow procedural direction when applying load to the machine resulting in the Unit 2 diesel generator being inoperable for approximately seven hours while troubleshooting activities were conducted. The operator did not perform the diesel loading in accordance with the procedure in that real load was applied in a manner that changed reactive load significantly in the opposite polarity from real load and resulted in a "loss of field" trip of the diesel generator output breaker. After troubleshooting, the surveillance was completed to ensure no impact to the voltage regulating circuit and restore operability for prior work activities. This issue was entered into the licensee's CAP as IR 1431240. Immediate corrective actions included revision of procedures that operated the diesel generator in parallel with another source to include information reminding operators that the Unit 2 EDG responded differently to load adjustments, and care should be used when making adjustments to prevent a "loss of field" trip.
The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The deficiency impacted the Equipment Performance attribute for reliability in that the performance deficiency challenged the voltage regulator protective feature and could have damaged the excitation circuit for the diesel generator. Inspectors performed the Phase 1 screening of the finding using the SDP and determined that the issue was of very low safety significance, or Green. The questions in IMC 0609, Attachment 4, Appendix A, Exhibit 2, Section A were answered "No" by inspectors because the diesel was quickly made available for emergency response following the breaker trip, and the remaining diesel generator and both offsite power sources were operable. Inspectors determined this finding to be cross-cutting in Human Performance-Resources in that the licensee ensures that appropriate training is provided to assure nuclear safety (H.2(b)) because a contributor to this finding was that a post-maintenance change in voltage regulator performance was not systematically communicated to the operating staff

through training.

Inspection Report# : 2012005 *(pdf)*

Significance: G Sep 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
CONTROL ROOM HVAC RCU HEAD BOLTS NOT TORQUED
A self-revealed finding of very low safety significance (Green) and associated NCV of TS 5.4.1.a was identified for the licensee's failure to specify torque values for the control room ventilation refrigeration condensing unit condenser head in the work instructions performed on January 19, 2012. The inspectors identified that this issue had a cross-cutting aspect in the area of Human Performance - Decision Making (H.1(b)). Inspectors determined that a contributor to this finding was that the Maintenance and Engineering Departments did not verify the assumptions or identify unintended consequences with possible variance in the interpretation and implementation of work instructions stating, "tighten bolts using a crisscross pattern and good mechanical judgment," vice specifying a torque value from MA-MW-736-600. Although this work practice had been in place for years, mechanics questioned the lack of a torque value during the post leak repair to restore operability. Engineering replied with "mechanical judgment" rather than specifying a torque value indicating that the practice was indicative of current performance. The heat exchanger leak was repaired and the head reassembled with nominal torque values.
The performance deficiency was more than minor because the performance deficiency, if left uncorrected, had the potential to lead to a more significant event. The inspectors performed an SDP Phase 1 screening for the finding using IMC 0609, Attachment 04, "Initial Characterization of Findings," and IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," and answered the first four questions "No." Therefore, the finding screened as very low safety significance, or Green.

Inspection Report# : 2012004 *(pdf)*

Significance: G Aug 03, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedure to Energize Bus 23-1 to Provide Torus Cooling for Unit 1
The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix R, Section III.L.3 for the licensee's failure to have an adequate procedure used to implement an alternative shutdown capability in the event of a fire in fire area TB-III. Specifically, the licensee failed to provide adequate steps to ensure the successful energization of Bus 23-1 from the Unit 2 Station Blackout (SBO) Diesel Generator (DG) in the event of a fire in fire area TB-III (Turbine Building Southern Zone Group). The licensee entered the issue into their corrective action program and added a step to close the Bus 23-1 and Bus 71 Tie Breaker.

The inspectors determined that the finding was more than minor because the procedure deficiency did not ensure the successful energization of Bus 23-1 from the Unit 2 SBO DG in the event of a fire in fire area TB-III, which was required to provide Torus cooling for Unit 1. The finding was screened as having very low safety significance in Task 1.3.1 of IMC 0609, Appendix F. This finding did not have a cross-cutting aspect because the finding was not representative of current performance.

Inspection Report# : 2012011 *(pdf)*

Significance: G Aug 03, 2012
Identified By: NRC

Item Type: NCV NonCited Violation
Inadequate Procedure for Cold Shutdown Repair of 1A Recirculation Pump Discharge Valve MO 1-202-5A
The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix R, Section III.L.5 for the licensee's failure to have a procedure in effect that would provide adequate cold shutdown repairs for the 1A Recirculation Pump Discharge Valve MO 1-202-5A. Specifically, a procedure deficiency in Quad Cities Annunciator Response Procedure (ARP) 0030-01, Attachment D, provided an incorrect terminal point and cubicle location on MCC 18/19-5 for the cable wire to be lifted for cold shutdown repair in the event of a fire in fire area TB-III. The licensee entered the issue into their corrective action program revised the procedure and corrected the deficiency.

The inspectors determined that the finding was more than minor because the procedure deficiency could have resulted in operational complications and could have delayed reaching cold shutdown in the event of a fire in fire area TB-III. The finding was screened as having very low safety significance in Task 1.3.1 of IMC 0609, Appendix F. This finding did not have a cross-cutting aspect because the finding was not representative of current performance.

Inspection Report# : 2012011 *(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

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