Quad Cities 1
3Q/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)*

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 Jun 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
UNIT 1 MSIV SLOW CLOSURE
A self-revealed finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," was identified on March 11, 2013, when all four outboard main steam isolation valves (MSIVs) were stroke timed greater than 5 seconds in the shut direction. Specifically, the allowable range for the as-left stroke time in the surveillance procedure did not ensure that the valve would meet the Technical Specification (TS) acceptance criteria throughout the operating cycle. The licensee entered the issue into the corrective action program as Issue Report 1485944, and corrective actions were taken to adjust the timing of all Unit 1 outboard MSIVs to restore compliance with TS.
This issue was more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The inspectors determined the finding screened as having very low safety significance (Green) because the inspectors answered "No" to each of the applicable screening questions located in IMC 0609. 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: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
BOTH UNIT 1 CORE SPRAY SUBSYSTEMS INOPERABLE
A self-revealed finding of very low safety significance (Green) and an associated NCV of TS 3.5.1.K were identified for two core spray systems inoperable due to degraded flood barriers on August 6, 2012. The failure of the 1B core spray and Unit 2 reactor core isolation cooling/2B core spray floor drain ball valves was caused by wear related degradation that occurred at the valve-to-actuator coupling that allowed the valve to not be fully seated despite the actuator indicating fully closed. Since the surveillance tested the floor drain ball valves in the as-found condition, the condition existed prior to discovery. Therefore, both Unit 1 core spray subsystems were inoperable due to degraded flood barriers. This condition would have required immediate entry into Limiting Condition for Operation 3.0.3 to commence a shutdown within 1 hour. This issue was entered into the licensee's CAP as IR 1397306. Corrective actions for this issue included repairs to the floor drain ball valves, extent of condition inspection of all reactor building floor drain ball valves and shortening the surveillance interval from 4 years to 2 years.
The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability of systems to respond to initiating events to prevent undesirable consequences. In this case, the Cornerstone attribute of protection against external factors (internal flood) was impacted. 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. The inspectors identified that this issue had a cross-cutting aspect in the area of Problem Identification and Resolution - Identification (P.1(a)). A contributor to this finding was that the Operations and Engineering Departments were aware that the reach rod operators for the floor drain ball valves were difficult to operate. However, an issue report was never entered into the corrective action program to make the organization aware of this issue, assess for proper operation, trend the valve performance, identify potential failure mechanisms, or document conclusions.

Inspection Report# : 2012005 *(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 03, 2013