

## Quad Cities 2

### 4Q/2015 Plant Inspection Findings

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#### Initiating Events

**Significance:** G Jun 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

#### **INADEQUATE ZONE OF PROTECTION FOR ELECTRICAL BUS MAINTENANCE**

A finding of very low safety significance and associated NCV of Technical Specification 5.4, "Procedures," was self-revealed on March 14, 2015, for the licensee's failure to implement a clearance order in accordance with procedure OP-AA-109-101, "Clearance and Tagging," for electrical maintenance on Bus 12, Cubicle 9. The clearance order failed to provide a safe zone of protection for all physical work to be performed under the clearance order or for required equipment protection. Immediate corrective actions included stopping all electrical work and verifying electrical work boundaries prior to re-commencing work. The licensee documented the issue in the corrective action program (CAP) under Issue Report 2468511.

The finding was determined to be more than minor because, if left uncorrected, it could become a more significant safety concern. Specifically, the failure to properly control and de-energize equipment prior to performing maintenance could have an impact on safety-related equipment (including equipment damage and potential loss of off-site power). The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings." Because the finding impacted the Initiating Events Cornerstone and Unit 1 was shut down at the time of the event, the inspectors determined the finding could be further evaluated using IMC 0609, Appendix G, Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings." The inspectors answered "No" to all questions in Exhibit 2 of IMC 0609, Appendix G, Attachment 1 and determined the finding was of very low safety significance (Green). This finding has a cross-cutting aspect in the area of Human Performance, Work Management because the licensee did not implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. Specifically, the licensee failed to plan, control, and execute a clearance order that provided a safe zone of protection for all physical work to be performed under the clearance order or for required equipment protection during maintenance on Bus 12, Cubicle 9 [H.5].

Inspection Report# : [2015002](#) (*pdf*)

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#### Mitigating Systems

**Significance:** G Sep 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **FAILURE TO EVALUATE DEGRADED OR NON-CONFORMING CONDITIONS FOR OPERABILITY**

A finding of very low safety significance and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee's failure to document degraded or non conforming conditions in the corrective action program (CAP) and route or discuss the

issue with Operations shift management so that operability of the affected components could be evaluated. Immediate corrective actions included entering the issues into the CAP and evaluating the issues for operability. The licensee captured the issue in the CAP as Issue Reports (IRs) 2537968 and 2537936.

The finding was determined to be more than minor because, if left uncorrected, it could become a more significant safety concern. Specifically, the failure to identify degraded, non-conforming, or unanalyzed conditions in the CAP and bring those conditions to the attention of Operations shift management so that the operability of safety-related systems, structures, and components (SSCs) may be evaluated could lead to those SSCs being in an inoperable condition without the appropriate Technical Specification (TS) actions taken. The inspectors concluded this finding was associated with the Mitigating Systems Cornerstone. The finding was determined to be of very low safety significance because the control room emergency ventilation (CREV) and high pressure coolant injection (HPCI) systems remained operable. This finding had a cross cutting aspect of identification in the area of problem identification and resolution because the licensee did not identify issues completely, accurately, and in a timely manner in accordance with the program. Specifically, when degraded and non conforming conditions were identified, licensee personnel failed to promptly capture the issues in the CAP [P.1].

Inspection Report# : [2015003](#) (*pdf*)

**Significance:**  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

**FAILURE TO ADEQUATELY INSPECT RELAY CONTACTS FOR OXIDATION RESULTS IN RELAY FAILURE**

A finding of very low safety significance and an associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was self-revealed for the licensee’s failure to establish a preventive maintenance procedure for HFA relays that was appropriate to the circumstances. Immediate corrective actions included burnishing of the associated relay contacts and testing the associated relays. In addition, the licensee revised their relay inspection procedure and planned future relay replacements during the next refueling outage. The licensee entered the issue into their CAP as IR 2485051.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Procedure Quality 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). Specifically, the failure to perform adequate preventive maintenance on the automatic depressurization system (ADS) logic HFA relay in 2013 resulted in the build up of oxidation on the relay contacts. This build up caused the relay to fail its next scheduled test in 2015. A senior reactor analyst performed a detailed risk evaluation and determined the finding was of very low safety significance. This finding had a cross cutting aspect of operating experience in the area of problem identification and resolution, because the licensee did not systematically collect, evaluate, and implement relevant internal and external operating experience in a timely manner. Specifically, the licensee identified several internal and external operating experience events related to relay contact oxidation and failed to implement changes to their relay inspection procedures to ensure that effective corrective actions were implemented [P.5].

Inspection Report# : [2015003](#) (*pdf*)

**Significance:**  Jun 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

**FAILURE TO CONDUCT POST MAINTENANCE TESTING FOLLOWING MANUAL OPERATION OF RCIC MOV**

A finding of very low safety significance and associated NCV of Technical Specification 5.4, “Procedures,” was self-revealed on March 22, 2015, for the licensee’s failure to conduct procedurally required post-maintenance testing on

reactor core isolation cooling (RCIC) motor operated valve (MOV) MO 1–1301–61, following operation of the valve in the manual mode. Immediate corrective actions included manually engaging the motor clutch and functionally stroking the valve from the control room to verify operation. The licensee captured this condition in their CAP as Issue Report 2472416.

The finding was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee was not able to ensure the operability of the RCIC system when they failed to conduct post-maintenance testing (PMT) on RCIC 1–1301–61. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions.” The inspectors answered “No” to all questions in Section A of Exhibit 2 and the finding screened as Green, or very low safety significance. This finding has a cross-cutting aspect in the area of Human Performance, Documentation, because the licensee did not maintain complete, accurate, and up-to-date documentation. Specifically, the licensee failed to document the status of the RCIC valve after placing it in the manual mode of operation to ensure that the required PMT was performed [H.7].

Inspection Report# : [2015002](#) (pdf)

**Significance:**  Mar 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

**FAILURE TO ESTABLISH AND MAINTAIN SERVICE LIFE FOR SAFETY-RELATED RELAY RESULTS IN FAILURE AND INOPERABILITY**

A finding of very low safety significance (Green) and associated NCV of 10 CFR 50, Appendix B, Criterion III, “Design Control,” was self-revealed on January 6, 2015, when an electrical maintenance worker found a tripped breaker in motor control center (MCC) 28–1, for the Unit 2 power feed to the common unit (Unit 0) fuel oil transfer pump (FOTP). The licensee determined that an HGA relay in the FOTP power transfer circuit had failed due to aging and not having any associated preventive maintenance task. The inspectors determined the licensee failed to establish and maintain the service life for the FOTP

HGA relay, which was a performance deficiency. This also resulted in the inoperability of the Unit 0 emergency diesel generator (EDG) for longer than its technical

specification allowed outage time, which was a violation of Technical Specification 3.8.1, “AC Sources–Operating.” The immediate corrective actions included replacing the failed relay and declaring the EDG operable following post-maintenance testing. The licensee captured the issue in their corrective action program (CAP) as Issue Report (IR) 2433389.

The performance deficiency was determined to be more than minor and a finding because it was associated with the equipment performance 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. Specifically, the performance deficiency caused an unplanned inoperable condition for the Unit 0 EDG. The inspectors evaluated the finding using IMC 0609, Appendix A, “The SDP for Findings At-Power,” issued June 19, 2012. The issue resulted in the EDG being inoperable for longer than the Technical Specification (TS) allowed outage time. A detailed risk analysis was performed and determined the finding was of very low safety significance. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because the licensee did not thoroughly evaluate issues to ensure that the resolution addressed causes and extent of conditions commensurate with their safety significance. Specifically, the licensee identified other EDG electrical component failures that occurred at the station where the causes were identified as failure to have associated preventive maintenance for the affected components and equipment. The extent of condition evaluations for those events failed to identify additional safety related components that did not have any associated preventive maintenance tasks or documented service life, including replacement schedules [P.2].

Inspection Report# : [2015001](#) (pdf)

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## Barrier Integrity

**Significance:**  Sep 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **FAILURE TO ESTABLISH ADEQUATE PROCEDURE TO PRECLUDE UNACCEPTABLE PRECONDITIONING OF THE STANDBY GAS TREATMENT SYSTEM**

A finding of very low safety significance and an associated non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee's failure to establish a procedure appropriate to the circumstances that precluded unacceptable preconditioning of the standby gas treatment (SBGT) system during surveillance testing. The licensee performed an evaluation and concluded the SBGT system was operable and planned additional testing on the relay timing function. Other corrective actions included revising the applicable procedures such that unacceptable preconditioning would not occur. The licensee captured this issue in their CAP as IR 2524699.

The finding was determined to be more than minor because it was associated with the Barrier Integrity Cornerstone attribute of Procedure Quality and affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the inadequate procedure had the potential to mask the ability of the SBGT system to initiate in time to prevent ex-filtration of radioactive gases during a design basis accident. The finding was determined to be of very low safety significance because it represented a degradation of the radiological barrier function for the SBGT system. This finding had a cross cutting aspect of questioning attitude in the area of human performance because the licensee did not recognize the possibility of mistakes, latent problems, or inherent risk, even while expecting successful outcomes. Specifically, the licensee failed to recognize that performing the steps in the specified sequence could unacceptably precondition the time-delay relay for the SBGT system and mask the ability of the system to perform its function [H.12].

Inspection Report# : [2015003](#) (pdf)

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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## 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.

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## Miscellaneous

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