

# Quad Cities 2

## 1Q/2011 Plant Inspection Findings

---

### Initiating Events

**Significance:**  Sep 30, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure to assess and manage maintenance risks resulting in a Unit 2 Manual Reactor SCRAM**

A self-revealed finding of very low safety significance (Green) and associated NCV of 10 CFR 50.65(a)(4) was identified for failure to assess and manage risks associated with maintenance activities. The applicable maintenance activities occurred between July 1, 2010 and August 17, 2010 on Unit 2. The inspectors determined that the licensee's actions to assess and manage the risks associated with maintenance activities did not prevent a transient that upset plant stability, and was identified as a performance deficiency. The inspectors identified that this finding has a cross cutting aspect because the licensee failed to verify the validity of the underlying assumptions supporting the work activity and identify possible unintended consequences (H.1(b)).

The inspectors determined the finding was more than minor because the performance deficiency adversely affected the Initiating Events Cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Using IMC 0609, Table 4a, Initiating Events Cornerstone column, Transient Initiators subsection; the question: "Does the finding contribute to both the likelihood of a reactor trip AND that mitigation equipment or functions will not be available?" was answered, "No" by the inspectors because all mitigating functions were available after the event. Therefore, this finding screens as Green, or very low safety significance.

Inspection Report# : [2010004](#) (pdf)

---

### Mitigating Systems

**Significance:**  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **MSIV RPS LIMIT SWITCH PRECONDITIONING**

NRC inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion V on December 21, 2010. While observing performance of QCOS 0250-01, "MSIV [Main Steam Isolation Valve] Scram Sensor Channel Functional Test," inspectors identified that the licensee's surveillance procedure unacceptably preconditioned the reactor protection system (RPS) 'B' limit switches during testing of the RPS 'A' switches. The licensee had not previously evaluated the pre-conditioning to determine potential impact to the test and subsequently validated the inspectors' assessment that the test methodology did unacceptably precondition the 'B' RPS limit switches. The issue was documented in the corrective action program as Issue Report 1155212. The procedure was revised and subsequent retesting on March 26 and 27, 2011, demonstrated that all MSIV RPS limit switches were operable.

This issue was more than minor because, if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern in that preconditioning could mask a condition which would prevent an automatic actuation of RPS on MSIV closure. Inspectors performed the SDP phase 1 screening using IMC 0609, Attachment 4, Table 4a, Mitigating Systems Cornerstone column, and answered all questions "No." Therefore, this finding is Green, or very low safety significance. The issue was considered a legacy issue and no cross-cutting aspect was assigned.

Inspection Report# : [2011002](#) (pdf)

**Significance:** **G** Mar 31, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**UNIT 1/2 EDG OUTPUT BREAKER FAILURE TO UNIT 2**

A self-revealed finding of very low safety significance (Green) and associated NCV of Technical Specification 5.4.1.a was identified on March 7, 2011, when a broken wire lug prevented closure of the 1/2 emergency diesel generator (EDG) output supply breaker to Unit 2 during core spray system logic testing. The failure to identify or correct wire routing deficiencies during cubicle inspections was a performance deficiency and a finding. The inspectors identified that work instructions did not contain sufficient detail to ensure that breaker wiring was configured correctly and the ability to perform safety functions was not adversely impacted. The broken lug was repaired and the 1/2 EDG was declared operable to Unit 2 on March 8, 2011. The issue was documented in the corrective action program as Issue Report 1184304.

This issue was more than minor because, if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern in that similar failures could result in a loss of safety function. Inspectors performed the SDP phase 1 screening using IMC 0609, Attachment 4, Table 4a, Mitigating Systems Cornerstone column, and answered all questions "No." Therefore, this finding screens as Green, or very low safety significance. The inspectors identified that this finding has a cross-cutting aspect in the Problem Identification and Resolution - Operating Experience Component. Specifically, the licensee failed to implement and institutionalize internal operating experience concerning the improper routing of cubicle wiring through appropriate changes to the station preventative maintenance program (P.2(b)).

Inspection Report# : [2011002](#) (pdf)

**Significance:** **G** Jun 30, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**PCIS RELAY COMMON NEUTRAL BROKEN**

A self revealed finding of very low safety significance and a NCV of Technical Specification (TS) 5.4.1 was identified on April 8, 2010, when a Unit 2 Group III containment isolation signal was received during replacement of a primary containment isolation system (PCIS) relay as a result of a disconnected common neutral wire. Immediate corrective actions for this event included restoration of the reactor water cleanup system and rewiring for the PCIS relay to the proper configuration. The inspectors determined that the licensee's failure to identify and provide instructions to mitigate the common neutral during the work planning process was a performance deficiency. The inspectors determined that this finding was cross cutting in the area of Human Performance, Work Control, because the licensee failed to assess the impact of changes to the work scope during the maintenance activity when plant operating conditions had changed (H.3(b)).

The inspectors determined the finding was more than minor because the performance deficiency impacted the Mitigating Systems Cornerstone attribute of Configuration Control for Operating Equipment Lineup to ensure the availability, reliability and capability of safety systems to respond to initiating events to prevent undesirable consequences. The inspectors performed a Phase 1 SDP evaluation. Using IMC 0609, Attachment 4, Table 4a, Mitigating Systems Cornerstone, all questions were answered "No," and this finding screened as Green, or having a very low safety significance.

Inspection Report# : [2010003](#) (pdf)

**Significance:** **G** Jun 30, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**MODE CHANGE WITHOUT REQUIRED RPS INSTRUMENT**

A self revealed finding of very low safety significance and a NCV of TS 3.0.4 was identified on April 14, 2010, when operators changed operating modes from MODE 2 to MODE 1 without having all required channels of the reactor protection system (RPS) turbine condenser vacuum low scram function available prior to entering MODE 1.

Immediate corrective actions for this event included restoration of the RPS channel. The inspectors determined that performing a MODE change from MODE 2 to MODE 1, without meeting the conditions of the limiting condition for operation (LCO) 3.0.4 or ensuring all required channels of the RPS turbine condenser vacuum low scram function

were available prior to entering MODE 1, was a performance deficiency. The inspectors determined that this finding was cross cutting in the area of Problem Identification and Resolution Evaluation, because the licensee failed to properly classify, prioritize, and evaluate the RPS functional operability of the degraded condenser vacuum indication (P.1(c)).

The inspectors determined the finding was more than minor because the performance deficiency impacted the Mitigating Systems Cornerstone attribute of Configuration Control for Operating Equipment Lineup to ensure the availability, reliability, and capability of safety systems to respond to initiating events to prevent undesirable consequences. The inspectors performed a Phase 1 SDP evaluation. Using IMC 0609, Attachment 4, Table 4a, Mitigating Systems Cornerstone, all questions were answered “No,” and this finding screened as Green, or having a very low safety significance.

Inspection Report# : [2010003](#) (*pdf*)

---

## Barrier Integrity

**Significance:**  Jun 30, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **LOSS OF POWER TO FREEZE SEAL MACHINE DURING OPDRV**

A finding of very low safety significance and a NCV of 10 CFR Part 50.65(a)(4) was self revealed on March 25, 2010, when operators turned off the electrical power to one of the two electrical freeze seal machines being used to apply a reactor coolant system boundary freeze seal. Specifically, plant staff did not identify the interrelation between the mechanical freeze seal activity and the operations electrical power switching activity during risk assessment activities, and, therefore, did not manage the work activities to prevent loss of power to the freeze seal machines providing the credited boundary to prevent draining the reactor vessel. Immediate corrective actions included restoration of power to the machine and reestablishment of freeze seal temperature.

The finding was determined to be more than minor because required risk management actions were not implemented. These risk management actions were associated with the Barrier Integrity Cornerstone attribute of Configuration Control and affected the cornerstone objective of providing reasonable assurance that the reactor coolant system boundary protects the public from radionuclide releases caused by accidents of events. The inspectors used IMC 0609, “Significance Determination Process,” Appendix G, “Shutdown Operations Significance Determination Process,” Attachment 1, “Shutdown Operations Significance Determination Process: Phase 1 Operational Checklist for Both PWRs and BWRs,” and determined that since key safety functions were maintained, the issue screened as Green. The inspectors identified a cross cutting aspect associated with this finding in Human Performance Resources, Procedures (H.2(c)). Although the engineering documentation evaluating the risk in using the electric freeze seal machine recommended the power supplies be protected by operations, this information was not translated into the freeze seal procedure, MA AA 736 610, or the applicable work package.

Inspection Report# : [2010003](#) (*pdf*)

---

## Emergency Preparedness

**Significance:**  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **INCORRECT WIND DIRECTION ON NARS FORM**

A NRC-identified finding of very low safety significance and associated NCV of 10 CFR 50.47(b)(9) was identified for delayed corrective action without appropriate compensatory actions for a defective computer point that sends wind direction data to the plant parameter display system (PPDS). This defective computer point resulted in incorrect wind direction on a Nuclear Accident Reporting System (NARS) form transmitted to the State of Illinois as part of the declaration of an Unusual Event on May 19, 2010. Corrective actions included the restoration of the computer point

for PPDS. Inspectors identified this performance deficiency had a cross cutting aspect in Problem Identification and Reporting Evaluation because although the non functional computer point, R234, was identified in December 2009, the licensee failed to thoroughly evaluate, classify, and prioritize the condition of bad data from a computer point and assess how the condition affected PPDS (P.1(c)).

This finding is more than minor because the performance deficiency matches an example of a Green finding from IMC 0609, Appendix B, Section 4.9, page B 20, "Equipment or systems necessary for dose projection are not functional for longer than 24 hours from the TIME OF DISCOVERY without compensatory measures, or corrective actions are inadequate or delayed." Using IMC 0609, Appendix B, Sheet 1, "Failure to Comply Flowchart," the performance deficiency screened as very low safety significance, or Green.

Inspection Report# : [2010003](#) (pdf)

---

## Occupational Radiation Safety

---

### Public Radiation Safety

**Significance:** SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO UPDATE THE UFSAR FOR FIRE PROTECTION DOCUMENTS**

A Severity Level IV NCV of 10 CFR 50.71(e), "Periodic Update of the Final Safety Analysis Report," and an accompanying Green finding were identified by the inspectors for the failure to update documents incorporated by reference in the Updated Final Safety Analysis Report (UFSAR) and provided to the NRC in UFSAR updates. Specifically, the licensee did not update dose consequence calculations for a fire in the intermediate radwaste storage facility (IRSF) to reflect changes in packaging methods of solid radioactive waste material stored in the IRSF and used to provide a basis for determining if the increase in event consequences to offsite dose resulting from a fire in the facility was not more than minimal. Corrective actions included revision of the calculations and implementation of procedural controls to limit activity stored in the building to ensure offsite dose limits were not challenged in the event of a fire.

This finding was determined to be more than minor using IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because if left uncorrected the performance deficiency could have led to a more significant safety concern. Specifically, failure to update the UFSAR or associated licensing basis documents impacts the licensee's ability to adequately evaluate plant changes under the 10 CFR 50.59 processes and could lead to the licensee erroneously making unacceptable changes to the facility. The phase 1 SDP screening performed by the inspectors concluded that, since no actual release had occurred, no dose was received as a result of the issue, and the probability of the initiating design basis fire for the IRSF was extremely low, both the Radioactive Material Control and the Effluent Release Program flowcharts of IMC 0609 Appendix D, "Public Radiation Safety Significance Determination Program," determine the finding was of very low safety significance (Green). The inspectors determined that this finding did not reflect present performance because it is a legacy issue with changes made to the facility more than 10 years previously; therefore, there was no cross-cutting aspect associated with this finding.

The associated Performance Deficiency is tracked as item 2010-005-02.

Inspection Report# : [2010005](#) (pdf)

**Significance:**  Dec 31, 2010

Identified By: NRC

Item Type: FIN Finding

#### **FAILURE TO UPDATE THE UFSAR FOR FIRE PROTECTION DOCUMENTS**

A Severity Level IV NCV of 10 CFR 50.71(e), "Periodic Update of the Final Safety Analysis Report," and an accompanying Green finding were identified by the inspectors for the failure to update documents incorporated by

reference in the Updated Final Safety Analysis Report (UFSAR) and provided to the NRC in UFSAR updates. Specifically, the licensee did not update dose consequence calculations for a fire in the intermediate radwaste storage facility (IRSF) to reflect changes in packaging methods of solid radioactive waste material stored in the IRSF and used to provide a basis for determining if the increase in event consequences to offsite dose resulting from a fire in the facility was not more than minimal. Corrective actions included revision of the calculations and implementation of procedural controls to limit activity stored in the building to ensure offsite dose limits were not challenged in the event of a fire.

This finding was determined to be more than minor using IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because if left uncorrected the performance deficiency could have led to a more significant safety concern. Specifically, failure to update the UFSAR or associated licensing basis documents impacts the licensee's ability to adequately evaluate plant changes under the 10 CFR 50.59 processes and could lead to the licensee erroneously making unacceptable changes to the facility. The phase 1 SDP screening performed by the inspectors concluded that, since no actual release had occurred, no dose was received as a result of the issue, and the probability of the initiating design basis fire for the IRSF was extremely low, both the Radioactive Material Control and the Effluent Release Program flowcharts of IMC 0609 Appendix D, "Public Radiation Safety Significance Determination Program," determine the finding was of very low safety significance (Green). The inspectors determined that this finding did not reflect present performance because it is a legacy issue with changes made to the facility more than 10 years previously; therefore, there was no cross-cutting aspect associated with this finding.

The associated traditional enforcement violation is tracked as item 2010-005-01.

Inspection Report# : [2010005](#) (*pdf*)

---

## 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