

# Quad Cities 1

## 2Q/2011 Plant Inspection Findings

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### Initiating Events

**Significance:**  Jun 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **RWCU PUMPS TRIPPED ON LOW FLOW**

A self-revealed finding of very low safety significance and associated NCV of 10 CFR 50.65(a)(4) was identified for failure to adequately assess and manage risks associated with maintenance activities to prevent plant transients that upset plant stability. On May 31, 2011, after a feedwater flush activity was delayed and rescheduled, operators implementing a clearance order supporting the activity failed to identify a conflict with the reactor water cleanup pumps operating in the decay heat removal mode. When the operators closed the feedwater injection valve and shut off the injection flow path, the reactor water cleanup pumps tripped on low flow. Immediate corrective actions included stopping the feedwater work, opening the feedwater injection valve, and restoring reactor water cleanup flow. The issue has been entered into the licensee's corrective action program as Issue Report (IR) 1223075.

The inspectors concluded the inadequate assessment and management of risk for the maintenance activity discussed above was a performance deficiency. Failure to identify operational impact and adequately evaluate the risk associated with moving the feedwater clearance activity resulted in tripping the reactor water cleanup pumps and challenging the key shutdown safety function of decay heat removal. This performance deficiency was different from the examples in IMC 0612, Appendix E, "Examples of Minor Issues," in that additional reliance on manual actions by operators was required to prevent a more significant challenge to key safety functions. The performance deficiency was more than minor because it could be reasonably viewed as a precursor to a significant event using the minor screening questions of IMC 0612, Appendix B. Inspectors performed the phase 1 assessment, using both Appendix G and Appendix K of IMC 0609, and determined the finding was Green because sufficient equipment was available to meet the core heat removal guidelines, the licensee's ability to recover decay heat removal was not significantly degraded, both subsystems of shutdown cooling were inoperable but available, the licensee's procedure contained appropriate direction for depressurizing and placing shutdown cooling subsystems in service, and the operators had the appropriate training and briefings to accomplish the required actions in the time required. The inspectors identified that this finding had a cross cutting aspect in Human Performance – Work Control, in that, the licensee failed to appropriately coordinate work activities by incorporating actions to address the impact of changes in the schedule and conflicts between different work activities (H.3(b)).

Inspection Report# : [2011003](#) (pdf)

**Significance:**  Jun 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **WRONG LIMIT ERROR DURING SURVEILLANCE**

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 May 4, 2011, when instrument technicians caused a control room alarm on Unit 2 after receiving permission from the Unit 1 unit supervisor to perform the test on Unit 1. Immediate actions included termination of the surveillance and restoration of the equipment to the correct lineup for plant conditions. The issue was entered into the corrective action program as IR 1211933.

Inspectors determined that the licensee's failure to follow the procedure as written resulted in Unit 2 surveillance procedure steps being performed on Unit 1 safety-related equipment; therefore, this was a performance deficiency. The inspectors answered the more than minor screening questions of IMC 0612, Appendix B, Figure 2, Block 9, question 2.a, indicating the performance deficiency could be viewed as a precursor to a significant event, and the finding was, therefore, more-than-minor. Inspectors determined that performing procedural action on the wrong unit would impact the Initiating Event Cornerstone objective of limiting the likelihood of upsetting plant stability and

challenging critical safety functions during power operations. Specifically, the objective attributes of configuration control equipment performance were negatively impacted. Inspectors performed the SDP phase I screening using IMC 0609, Attachment 4, Table 4a for transient initiators in the Initiating Events Cornerstone column and answered the question “No.” The issue was screened as Green or very low safety significance. Inspectors concluded that the finding had a cross-cutting aspect in Human Performance-Work Practices, in that, licensee staff involved in the event failed to utilize human performance error prevention techniques commensurate with the risk of the assigned task to prevent impact to the station (H.4(a)).

Inspection Report# : [2011003](#) (*pdf*)

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## 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*)

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## Barrier Integrity

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## Emergency Preparedness

**Significance:** SL-IV Jun 23, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval.**

The inspector identified a violation of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54(q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The violation affected the NRC’s ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated

using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance. (1EP4)

The associated performance deficiency is tracked as item 2011-503-02.

Inspection Report# : [2010503](#) (pdf)

**Significance:**  Jun 23, 2011

Identified By: NRC

Item Type: FIN Finding

**Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval.**

The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding. (Section 1EP4)

The associated traditional enforcement item is tracked as item 2011-503-01.

Inspection Report# : [2010503](#) (pdf)

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## Occupational Radiation Safety

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## Public Radiation Safety

**Significance:** SL-IV 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 Performance Deficiency is tracked as item 2010-005-02.

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

**Significance:**  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 traditional enforcement violation is tracked as item 2010-005-01.

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

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## **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.

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# Miscellaneous

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