

# Watts Bar 1

## 1Q/2010 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:**  Mar 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to assure that test requirements were satisfied following a design change**

The inspectors identified a violation of very low safety significance and an associated non-cited violation of 10 CFR 50 Appendix B Criterion XI, Test Control, for the licensee's failure to assure that test requirements were satisfied following a design change affecting the unit 2 channel III (2-III) safety-related vital AC board. As a result, the 2-III vital AC board was returned to service with post modification test (PMT) acceptance criteria not being met; leaving a non-conforming transfer switch on the 2-III vital AC board. The licensee entered this issue into the corrective action program as PER 215224.

The inspectors reviewed IMC 0612 and determined that the finding was more than minor because the finding would have the potential to lead to a more significant safety concern if left uncorrected, in that, failing to ensure that PMT acceptance criteria are met could allow risk significant equipment to unknowingly be returned to service in a degraded condition. This finding was evaluated using the significance determination phase 1 screening criteria and was determined to be of very low safety significance because the finding did not represent an actual loss of safety function of a single train of equipment for greater than its technical specification allowed outage time. The cause of the finding had a cross-cutting aspect in the area of human performance associated with the work control component. It was directly related to the licensee appropriately coordinating work activities by incorporating actions to address the impact of changes to the work scope on the plant [H.3(b)]. Specifically, when faced with an unexpected failure of the PMTI as written, the licensee failed to restore the 2-III transfer switch to its design basis condition following maintenance. As a result, a non-conforming switch, revealed during design change testing, was placed into service. (Section 1R19)

Inspection Report# : [2010002](#) (*pdf*)

**Significance:**  Mar 31, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure to establish adequate instructions or procedure for determining vital inverter frequency**

A self-revealing, non-cited violation (NCV) of TS 5.7.1, Procedures, was identified for the licensee's failure to properly implement SPP-2.2, Standard Programs and Processes Administration of Site Technical Procedures. Specifically, while performing vital inverter frequency verifications required by TS surveillance 3.8.7.1, the licensee failed to take the actions specified in SPP 2.2 to implement a procedure change or write a new procedure when the surveillance could not be performed as written. As a result, the output of the unit 2 channel II safety-related vital inverter was short-circuited when improperly selected test equipment was connected across the inverter's installed frequency meter. The short circuit condition damaged a power diode in the inverter circuit and caused annunciator fuses and the 600 amp inverter power fuse to blow. The inverter automatically transferred to its nonbattery-backed bypass supply. The licensee entered the issue into the corrective action program as PER 212143.

The inspectors reviewed IMC 0612 and determined that the finding was more than minor because the finding would

have the potential to lead to a more significant safety concern if the licensee's failure to work within the established work control process was left uncorrected. The finding was evaluated using the significance determination phase 1 screening criteria and was determined to be of very low safety significance because the finding did not represent an actual loss of safety function of a single train of equipment for greater than its TS-allowed outage time. The cause of the finding had a cross-cutting aspect in the area of human performance associated with the decision-making component. It was directly related to licensee making safety-significant or risk-significant decisions using a systematic process, especially when faced with uncertain or unexpected plant conditions, to ensure safety is maintained [H.1(a)]. Specifically, when it was determined the surveillance instruction could not be performed as written, the licensee did not use the established work control or procedure change processes in support of making the decision to substitute use of M&TE for the failed frequency meter. (Section 40A2.2)

Inspection Report# : [2010002](#) (pdf)

**Significance:**  Dec 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Implement Analysis for Failed Auxiliary Charging Pumps**

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50.55a(f)(4) for the licensee's failure to meet in-service test requirements for the 1B auxiliary charging pump. Between December 2008 and December 2009, licensee personnel tested the pump and determined that it was in the required action range. The licensee failed to either declare the pump inoperable until corrected or perform an analysis in accordance with program requirements. As part of their corrective action, the licensee performed an analysis of the pump, revised test procedures, and entered the issue into the corrective action program (CAP) as PER 211724.

This finding was more than minor because if left uncorrected it has the potential to become a more significant safety concern. Specifically, the failure to adhere to equipment testing requirements could have allowed the loss of functional capability of the auxiliary charging pumps to exist without detection until the pumps were required to perform their designed safety function. The inspectors determined that the finding was of very low safety significance because the functional capability of the auxiliary charging pumps (ACPs) was not lost. The finding directly involved the cross-cutting area human performance under the supervisory and management oversight of work activities component, in that, the failures of the ACPs were left unresolved for an extended period of time over a number of failed tests. (H.4(c)).

Inspection Report# : [2009005](#) (pdf)

**Significance:**  Jun 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to impliment proc. to maintain design of intake pumping station missile shield**

10 CFR 50 Appendix B, Criterion V states, in part, that activities affecting quality shall be prescribed by documented instructions or procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions or procedures. Contrary to the above, on April 16 and 30, 2009, the NRC identified that the licensee failed to accomplish documented instructions contained in work order 08-818588-000 to ensure that the design of the safety-related IPS missile shield was maintained. Because this finding was of very low safety significance and has been entered into the corrective action program as PERs 168839 and 170028, this violation is characterized as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000390/2009003-01, Failure to Adequately Implement Procedures to Maintain the Design of the Intake Pumping Station Missile Shield.

Inspection Report# : [2009003](#) (pdf)

**Significance:**  Jun 26, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **failure to promptly correct a condition adverse to quality --- A shutdown boardroom chiller**

Green. A self-revealing non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI was identified for failure to take timely and effective corrective action to maintain the capillary line to the Essential Raw Cooling Water

(ERCW) condenser water temperature control valve (1-TCV-67-158) filled with water to ensure operability of the 'A' Shutdown Boardroom chiller. The licensee vented the line, returning the chiller to service, and entered the issue into their CAP.

The finding is more than minor because it affects the Mitigating Systems Cornerstone objective of ensuring the availability of the 'A' Shutdown boardroom chiller, which is a system that responds to initiating events. It is also associated with the cornerstone attribute of equipment availability and reliability. This finding was assessed using the Phase 1 screening worksheet of the SDP and determined to be of very low safety significance (Green) because it did not result in an actual loss of safety function of a single train for greater than the Technical Specification (TS) allowed outage time and was not potentially risk-significant due to external events. This finding has a cross-cutting aspect in the Work Control component of the Human Performance area (H.3(b)), because the licensee failed to properly prioritize the compensatory maintenance activities to support safety system operability of an operable but degraded system. (Section Inspection Report# : [2009006](#) (pdf))

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## Barrier Integrity

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

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to submit complete and accurate informatin for a requested license amendment**

The inspectors identified an NCV of 10 CFR 50.9(a), Completeness and Accuracy of Information, when the licensee failed to submit complete and accurate information for License Amendment 77 (LA 77) related to the permeation of the Tritium Producing Burnable Absorber Rods (TPBARS) when pertinent information became available to the licensee prior to the issuance of LA 77. The licensee has entered this item into its corrective action program as PER 210845

This finding was considered as traditional enforcement because the failure to provide complete and accurate information impacted the regulatory process. This finding was determined to be minor because the licensee configured the core TPBAR loading in a conservative manner. However, due to a lack of completeness of information provided by the licensee to the NRC, the NRC approved LA 77 which gave the licensee allowance to change the configuration of core TPBAR loading which the NRC may not have otherwise allowed. The lack of completeness impeded the NRC regulatory process. Consistent with the guidance in Section IV.A.3 and Supplement VII, Paragraph D.1 of the NRC Enforcement Policy, this finding was determined to be a Severity Level IV non-cited violation. (Section 4OA5.2)

Inspection Report# : [2010002](#) (pdf)

**Significance:**  Sep 30, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to incorporate existing design criteria into temporary secondary containment boundary doors**

A self-revealing, non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion III, Design Control, was identified for failure to correctly translate the personal access door design basis into the specifications for the temporary ABSCE boundary doors installed to facilitate Unit 2 construction. As a result, the ABSCE boundary was disabled when the temporary doors (R002 and R003) failed during auxiliary building ventilation changes on May 27, 2009. The licensee entered the issue into the corrective action program as PER 172301, made door repairs to re-establish the ABSCE boundary, and took interim actions to minimize differential pressure across the temporary doors during auxiliary building ventilation changes.

The licensee's failure to utilize existing design criteria for doors R002 and R003 was a performance deficiency. The inspectors reviewed Inspection Manual Chapter (IMC) 0612 and determined that the finding was more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern, specifically for loss of the secondary containment boundary. Additionally, the finding was associated with the design control attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers, such as the secondary containment boundary, protect the public from radionuclide releases caused by accidents or events. Using the phase I screening worksheet of IMC 0609, the inspectors determined

that the finding was of very low safety significance (Green) because it only represented a degradation of the radiological barrier function provided for the auxiliary building. The cause of the finding had a cross-cutting aspect in the area of human performance associated with the resources component. It was directly related to maintaining long term plant safety by maintenance of the design margins aspect of the resources component [H.2(a)]. Specifically, the licensee did not utilize the existing design criteria for auxiliary building doors designated as air locks. (Section 4OA3.1.b.1)

Inspection Report# : [2009004](#) (pdf)

**Significance:** G Sep 30, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Inadequate corrective actions to preclude additional temporary secondary containment boundary doors failure**

A self-revealing NCV of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action, was identified for the licensee's failure take prompt corrective actions to preclude repetition of the failure of the temporary auxiliary building secondary containment envelope (ABSCE) boundary doors installed to facilitate Unit 2 construction. Following the previous failure of temporary ABSCE boundary doors R002 and R003 during auxiliary building ventilation changes, the licensee initiated PER 172301 to determine the cause of the door failure. In accordance with licensee procedure PIDP-4, Corrective Action Program Screening and Oversight, PER levels are assigned based on the consequences of the identified condition and also on the frequency or probability of issue occurrence. Based on the condition classification guidance in Appendix A of PIDP-4, the door failures were considered by the licensee to be a Significant Condition Adverse to Quality (SCAQ), which required the associated PER to be designated as an A-level PER. Accordingly, PER 172301 was assigned as an A-level (highest category) requiring a root cause analysis and corrective actions to prevent recurrence. Corrective actions to prevent recurrence developed by the root cause team were not incorporated into plant procedures, and as a result, temporary doors (R002 and R003) failed during auxiliary building ventilation changes on June 27, 2009. The licensee entered the issue into the corrective action program as PER 175160, made door repairs to re-establish the ABSCE boundary, and shut the Unit 2 reactor building access doors to provide an additional ventilation barrier.

The licensee's failure to take corrective actions to preclude the temporary door failure repetition was a performance deficiency. The inspectors reviewed IMC 0612 and determined that the finding was more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern, specifically for loss of the secondary containment boundary. Additionally, the finding was associated with the design control attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers, such as the secondary containment boundary, protect the public from radionuclide releases caused by accidents or events. Using the phase I screening worksheet of IMC 0609, the inspectors determined that the finding was of very low safety significance (Green) because it only represented a degradation of the radiological barrier function provided for the auxiliary building. The cause of the finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program component. It was directly related to the licensee thoroughly evaluating problems such that resolutions address the problem's causes. [P.1(c)]. Specifically, during the investigation of the May 27, 2009, ABSCE door failures, the licensee failed to address the inadequate design of temporary doors R002 and R003. (Section 4OA3.1.b.2)

Inspection Report# : [2009004](#) (pdf)

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

**Significance:** **G** Jun 26, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**failure to follow plant procedures for cancelling preventative maintenance**

Green. A self-revealing NCV of Technical Specification 5.7.1 was identified for the licensee's failure to follow plant procedures which resulted in the failure of the Unit 1 Shield Building Vent Radiation Monitor System, an effluent radiation monitor.

The inspectors determined the licensee's failure to follow site procedures for PM cancellation was a performance deficiency and a finding. The inspectors reviewed Inspection Manual Chapter (IMC) 0612 and determined that the finding is more than minor because the finding is associated with the plant facilities/equipment and instrumentation attribute (reliability of process radiation monitors) of the radiation safety cornerstone (public radiation safety) and adversely affected the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian use. The finding was assessed using the IMC 0609, Appendix D, Public Radiation SDP, and because there was no failure to implement the effluent program, the finding was determined to be of very low safety significance (Green). No cross-cutting aspect was assigned to this finding because the direct cause was not considered indicative of current performance. (Section 40A2.a.3.ii)

Inspection Report# : [2009006](#) (*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

**Significance:** SL-IV Dec 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Adequately Update the UFSAR for the Removal of the Additional Diesel Generator Unit.**

The inspectors identified an NCV of 10 CFR 50.71(e) for failure to adequately update the Updated Final Safety Analysis Report (UFSAR) to reflect that the additional diesel generator unit (ADGU) was never completed and made available for use as described in the UFSAR. The licensee entered these issues into the CAP as PER 175830. This finding was considered as traditional enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. The inspectors used the NRC Enforcement Policy, Supplement I, to determine that the issue was more than minor because including references of incomplete equipment in the UFSAR would have a material impact on licensed activities associated with the onsite emergency AC power distribution system. This issue was considered a SL-IV violation because the inaccurate information was not used to make any change to the facility. No cross-cutting aspect was identified

Inspection Report# : [2009005](#) (*pdf*)

**Significance:** N/A Jun 26, 2009

Identified By: NRC

Item Type: FIN Finding

**Watts Bar PI&R Summary**

The team concluded that, in general, problems were properly identified, evaluated, prioritized, and corrected. Generally, the threshold for initiating problem evaluation reports (PERs) was appropriately low, as evidenced by the types of problems identified and large number of PERs entered annually into the Corrective Action Program (CAP).

Employees were encouraged by management to initiate PERs. However, the team determined that recently there have been some conditions adverse to quality identified by the resident inspectors that were not appropriately entered into the CAP.

Generally, prioritization and evaluation of issues were consistent with the licensee's CAP guidance, formal root cause evaluations for significant problems were adequate, and corrective actions specified for problems were acceptable. Overall, corrective actions developed and implemented for issues were generally timely, effective, and commensurate with the safety significance of the issues.

The team determined that, overall, audits and self-assessments were adequate in identifying deficiencies and areas for improvement in the CAP, and appropriate corrective actions were developed to address the issues identified. Operating experience usage was found to be generally acceptable and integrated into the licensee's processes for performing and managing work, and plant operations.

Based on discussions and interviews conducted with plant employees from various departments, the inspectors determined that personnel at the site felt free to raise safety concerns to management and use the CAP to resolve those concerns.

Inspection Report# : [2009006](#) (*pdf*)

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