

# Watts Bar 1

## 4Q/2008 Plant Inspection Findings

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### Initiating Events

**Significance:**  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Incorporate Design Parameters into Plant Setpoint Document for the Containment Particulate Radiation Monitor**

The NRC identified a Green, non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for failure to translate revised design parameters into the setpoint and scaling document for the lower containment particulate radiation monitor. As a result, the radiation monitor was inoperable, due to incorrect alarm setpoints, for longer than the Technical Specification allowed out of service time. The licensee corrected the radiation monitor alarm setpoint and initiated entered the issue into their corrective action program as Problem Evaluation Report 154635.

The inspectors concluded that the finding was more than minor because the radiation monitor inoperability resulted in potential impact on reactor safety and adversely affected the availability and reliability of the equipment performance attribute of the Initiating Events Cornerstone. This finding was evaluated using the Significance Determination Process Phase 1 screening criteria and was determined to be of very low safety significance because other methods of reactor coolant system leak detection were available. The finding directly involved the cross-cutting area of Problem Identification and Resolution under the thorough evaluation of identified problems aspect of the corrective action program component, in that, the licensee failed to properly evaluate the radiation monitor's as-found alarm setpoint, which was substantially different than the specified setpoint, prior to resetting the alarm setpoint to the larger value (P.1.c).

Inspection Report# : [2008005](#) (*pdf*)

**Significance:**  Dec 31, 2008

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Performing Non-Authorized Activities on Exciter Field Breaker Results In Reactor Trip**

A Green self-revealing finding was identified for the failure to obtain authorization prior to opening the main generator exciter field breaker compartment and operating the de-latching bar. The licensee's procedures for controlling sensitive plant equipment specified that personnel obtain the Unit Supervisor's authorization prior to beginning work on sensitive equipment. Operating the de-latching bar resulted in the exciter field breaker opening which resulted in the turbine generator and the reactor tripping. The licensee entered this issue into their corrective action program as Problem Evaluation Report 152955.

The finding was more than minor because it was associated with the Human Performance attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during at-power operations. This finding was evaluated using the Significance Determination Process Phase 1 screening criteria and was determined to be of very low safety significance because the finding did not contribute to both a reactor trip and the likelihood of mitigation equipment or functions not being available. The cause of the finding was directly related to the human performance and error prevention aspect of the cross-cutting area of Human Performance, in that, personnel failed to use the self-checking technique to stop and consider their actions for two minutes prior to proceeding with an activity (H.4.a).

Inspection Report# : [2008005](#) (*pdf*)

**Significance:**  Mar 14, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Installation of Different RHR Flow Limiters Than Prescribed by Procedure**

A Green, NRC-identified, non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for installing flow limiting devices, on A-train residual heat removal (RHR) system valves, which were not equivalent to those described in operating procedures. The devices were installed at reduced reactor coolant system (RCS) inventory to prevent pump cavitation in the event of a loss of control air during upcoming mid-loop operation. The nonconforming device caused the RHR heat exchanger outlet valve not to fully return to its desired throttled position after verification that the flow limiting devices would limit flow within specified values. The licensee entered this issue into their corrective action program (CAP) as problem evaluation report (PER) 140284.

The finding was more than minor because it was associated with the equipment performance attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown. The finding was evaluated by a Phase 2 analysis in accordance with the Significance Determination Process as specified by Manual Chapter 0609, Appendix G, Checklist 3 (one train of decay heat removal was degraded). The Phase 2 analysis characterized the finding as of very low safety significance (Green) because of the slow RCS heatup rate due to the low decay heat after being shutdown for 32 days and the ease of recovery from the condition. The cause of the finding was directly related to the corrective action program issue identification aspect of the cross-cutting area of Problem Identification and Resolution, in that, the licensee failed to identify the discrepancy in form, fit, and manner in which the function was accomplished between the flow limiting devices that were specified in licensee procedures and those that were actually installed (P.1(a)). (Section 40A3.2)

Inspection Report# : [2008004](#) (*pdf*)

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## **Mitigating Systems**

**Significance:**  Dec 31, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Translate ERCW Pump Coupling Material Change into Procedures**

A Green self-revealing non-cited violation of 10 CFR 50 Appendix B, Criterion III, Design Control, was identified for the failure to adequately translate material specifications into procedures. As a result, the B-A essential raw cooling water (ERCW) pump coupling failed due to an improper material being used. The licensee entered this issue into their corrective action program as Problem Evaluation Report 148716.

This finding is more than minor because it affects the plant modifications area of the design control attribute of the Mitigating Systems Cornerstone objective of reliability and availability, and if left uncorrected, it would result failure of other ERCW pumps. 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.

Inspection Report# : [2008005](#) (*pdf*)

**Significance:**  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Carbon Dioxide System in Fire Area 48 Failed to Meet Design Criterion**

The NRC identified a Green, non-cited violation of Unit 1 Operating License Condition 2.F for not having a carbon dioxide (CO<sub>2</sub>) suppression system for the Unit 1 auxiliary instrumentation room with the capability to maintain the design basis gas concentration of 50 percent in portions of the room for 15 minutes. The licensee entered the problem into their corrective action program.

The finding is more than minor because it affects the Mitigating Systems cornerstone objective of ensuring reliability and capability of systems that respond to initiating events and the cornerstone attribute of protection against external factors, i.e. fire. The finding was determined to be of very low safety significance by a Significance Determination Process Phase 1 evaluation. Test records indicated a 50 percent CO2 concentration for 15 minutes in the lower half of the room and a 45 percent concentration for 15 minutes at three quarters of room height. This concentration was an acceptable amount to extinguish the most likely fire in this portion of the room.

Inspection Report# : [2008005](#) (*pdf*)

**Significance:**  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Plant Startup with Inoperable AFW Automatic Start on Trip of All MFW Pumps**

A Green, NRC-identified non-cited violation of Technical Specification (TS) 3.0.4.a was identified for entering Modes 2 and 1 without an operable channel of auxiliary feedwater automatic start on a trip of all main feedwater pumps as required by TS 3.3.2. The licensee defeated this channel by introducing a signal that artificially indicated that a main feedwater pump was operating. This practice existed since initial plant startup. The licensee entered this issue into their corrective action program as Problem Evaluation Report 147351.

The finding is more than minor because it is associated with the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability of systems that respond to initiating events. Using IMC 0609, Appendix 0609.04, the finding 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 for greater than its TS allowed outage time since other initiation signals were available to automatically start the auxiliary feedwater pumps if needed. The cause of the finding was directly related to the Implementation of Corrective Actions aspect in the Problem Identification and Resolution cross-cutting area, in that, the licensee failed to take appropriate corrective action in a timely manner to address the non-cited violation issued in NRC Inspection Report 05000390/2006004 associated with making plant mode changes with the auxiliary feedwater automatic start function trip of all main feedwater pumps inoperable (P.1 (d)).

Inspection Report# : [2008003](#) (*pdf*)

**Significance:**  Jun 30, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Comply with Technical Specification 3.3.2 to Have Two Trains of Automatic Actuation Logic and Actuation Relays for Safety Injection and Feedwater Isolation Operable**

A Green, self-revealing non-cited violation of Technical Specification 3.3.2 was identified for failure to have two trains of safety injection (SI) automatic actuation logic and two trains of feedwater isolation actuation logic operable while in Mode 3. Upon the removal of temporary jumpers, the relay which blocks the actuation circuitry from performing their function was not reset. This condition existed until approximately 12 hours later when the licensee reset the relay by closing the reactor trip breakers. The licensee entered this event into their corrective action program as Problem Evaluation Report 140641.

This finding is more than minor because it affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events and adversely affected the cornerstone's equipment performance attribute for availability and reliability. A Phase 2 evaluation in accordance with IMC 609, Significance Determination Process, determined the finding to be of very low safety significance (Green) because of the low decay heat at the end of a refueling outage; the time for operators to take recovery actions; and due to the plant conditions, only the containment high pressure SI actuation portion of the automatic SI actuation logic was affected. The cause of the finding was directly related to the documentation, procedures and component labeling cross-cutting aspect in the resources component of the Human Performance cross-cutting area, in that, the instructions used by personnel to remove the temporary jumpers failed to provide necessary steps to ensure the

actuation logics were returned to an operable status (H.2(c)).

Inspection Report# : [2008003](#) (pdf)

**Significance:**  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Follow Procedure Resulted in Inadequate Control of Materials Brought into Containment**

Green. The inspectors identified a NCV of Technical Specification (T.S.) 5.7.1 for failure to properly implement procedural requirements and engineering controls for materials brought into containment while the plant was at power. The procedural violation resulted in temporary equipment/material left in containment with incorrect/incomplete documentation. The licensee entered these issues into the corrective action program (CAP) and either removed or properly evaluated the materials left in containment.

This finding is more than minor because it was associated with the Mitigating Systems Cornerstone attribute of equipment performance, specifically reliability, and adversely affected the cornerstone objective. The finding is of very low safety significance because no equipment was rendered inoperable. The finding directly involved the cross cutting area of human performance under the procedural compliance aspect of the work practices component, in that, the procedural requirements of the licensee's procedure for containment access were not met and equipment/material left in containment was not properly analyzed and documented. (H.4 (b)) (Section 40A2)

Inspection Report# : [2008002](#) (pdf)

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## **Barrier Integrity**

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

**Significance:**  Mar 31, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Properly Prepare a Radioactive Material Package for Shipment**

Green. A self-revealing NCV of 10 CFR 71.5 was identified for failure to properly package radiological material such that, under conditions normally incident to transportation, the radiation levels at the external surface of the package would not exceed applicable Department of Transportation (DOT) limits. When the shipment of equipment arrived at a processing facility on March 3, 2008, the contact radiation dose rate measurement in a small area on the bottom of the external surface of one of the packages was 340 mrem/hr, which was in excess of the 200 mrem/hr limit. Subsequent measurements by the licensee determined the dose rate to be 400 mrem/hr. This finding was entered into the licensee's corrective action program as Problem Evaluation Report (PER) 139447.

This finding is more than minor because it is associated with the plant facilities/ equipment and instrument attribute of the Public Radiation Safety Cornerstone and adversely affected the cornerstone objective, in that the improper

transportation packaging resulted in a shipping container with external dose rates exceeding regulatory requirements. Using the Public Radiation Significance Determination Process, the finding was determined to be of very low safety significance because the area on the package with the elevated radiation level was inaccessible to the public and the radiation level did not exceed two times the DOT limit. This finding was reviewed for cross-cutting aspects and none were identified. (Section 2PS2)

Inspection Report# : [2008002](#) (*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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