

# Watts Bar 1

## 2Q/2006 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:** **G** Dec 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to take adequate corrective action to correct TDAFW jet plug leaks.**

Green. The inspectors identified a non-cited violation (NCV) for the failure to comply with 10 CFR 50 Appendix B, Criterion XVI, Corrective Action, in that turbine-driven auxiliary feedwater (TDAFW) turbine casing jet plug leaks identified on June 3, 2004, were not corrected which resulted in the TDAFW pump being declared inoperable on May 17, 2005, while performing steam leak repairs. This finding affected the Problem Identification and Resolution Cross-Cutting Area.

This finding was considered more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone to ensure the availability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The failure to repair turbine jet plug steam leaks during the refueling outage resulted in unnecessary unavailability of the TDAFW pump during power operations. The finding was determined to be of very low safety significance because the motor-driven auxiliary feedwater (MDAFW) pumps were available and the TDAFW pump was out of service for less than its Technical Specification allowed outage time.

Inspection Report# : [2005005\(pdf\)](#)

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### Barrier Integrity

**Significance:** **G** Sep 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Procedures for Containment Closure**

The inspectors identified a violation of Technical Specification 5.7.1.1 for an inadequate procedure for containment closure. The licensee's procedure for containment closure during loss of shutdown cooling events could have resulted in not being able to restore containment availability. This was due to the use of a temporary foam seal, which was not rated for containment pressure, and due to the procedures allowing up to four hours to install blind flanges.

This finding is more than minor because it affected the configuration control attribute of the Barrier Integrity Cornerstone for the reactor containment. The temporary penetration seals relied upon for containment closure were not leak tight and would fail if the containment pressurized. This finding was of very low safety significance because the time duration with the reactor coolant system depressurized and vented with the vessel head on, one charging pump and two safety injection pumps was short, and all four diesel generators (DGs) were available, and the Unit 2 DGs can backfeed the Unit 1 shutdown boards. The finding was entered into the licensee corrective action program as problem evaluation report (PER) 79310. The cause of this finding (inadequate technical evaluations) impacts the human performance cross-cutting area.

Inspection Report# : [2005004\(pdf\)](#)

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**Significance:** **W** Sep 15, 2005

Identified By: NRC

Item Type: VIO Violation

#### **Failure to Implement and Maintain Shutdown Procedures which Resulted in Pressurizer PORV Actuations**

On February 22, 2005, licensee staff made inappropriate operational decisions during the transition to solid plant operations to return a charging control valve to service following a design change and before all post-maintenance testing (PMT) was complete. As a result of the erratic control provided by the valve, operators failed to adequately implement procedures for solid plant operations, as required by the Watts Bar Technical Specifications, which resulted in multiple actuations of the pressurizer PORVs in low temperature over pressure (LTOP) mode. This event challenged the reactor coolant system (RCS) integrity by pressurizer power-operated relief valve (PORV) actuations and challenged RCS inventory control by the loss of RCS coolant via the open PORVs.

The finding was characterized as WHITE in the NRC Final Significance Determination letter (IR 05000390/2006007), dated April 7, 2006. The violation was identified as VIO 05000390/2006007-01, White Finding - Failure to Implement Shutdown Procedures which Resulted in Pressurizer PORV Actuations. A supplemental inspection in accordance with Inspection Procedure 95001 will be conducted.

This supplemental inspection was performed by the NRC to assess Tennessee Valley Authority's evaluation and corrective actions associated with a White finding related to the failure to implement shutdown procedures which resulted in multiple actuations of pressurizer PORVs. The performance issue for the finding was previously characterized as having low to moderate risk significance (White) in the NRC Final Significance Determination letter (IR 05000390/2006007), dated April 7, 2006.

A supplemental inspection was performed and documented in Inspection Report 05000390/2006010. During this supplemental inspection, which was performed in accordance with Inspection Procedure 95001, "Inspection for One or Two White Inputs In a Strategic Performance Area," the NRC concluded that the licensee's problem identification and root cause analysis was acceptable. The licensee determined that the root cause of the event was attributable to personnel lack of sensitivity to and failure to recognize the hazards associated with the approach to solid water operations. Further contributing to this event were the failure to correct a long standing equipment performance problem and operating under plant conditions that exacerbated the effects of that equipment performance problem. The completed and proposed corrective actions, including actions to prevent recurrence, have adequately addressed the results of the root cause evaluation.

Inspection Report# : [2005013\(pdf\)](#)

Inspection Report# : [2006003\(pdf\)](#)

Inspection Report# : [2006007\(pdf\)](#)

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## Emergency Preparedness



**Significance:** Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Comply with Technical Specification Required Actions for Two Inoperable Containment High Range Radiation Monitors**

An NRC-identified non-cited violation of Technical Specification 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," was identified for failure to take the required actions when the containment high range radiation monitors were not restored to operable status within the allowed outage time. The licensee has entered this violation into their corrective action program for resolution.

The finding is more than minor because it is associated with the facilities and equipment attribute of the Emergency Preparedness Cornerstone and affects the cornerstone objective planning standard of 10 CFR 50.47(b)(8). The finding is of very low safety significance because the performance deficiency was a failure to comply with a non-risk significant planning standard and no planning standard function failure occurred. The cause of the finding is related to the cross-cutting element of problem identification and resolution, in that, the licensee failed to adequately evaluate the condition for impact on equipment operability.

Inspection Report# : [2006003\(pdf\)](#)



**Significance:** Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to perform air quality test for compressors used to supply emergency preparedness SCBA breathing air tanks**

An NRC-identified non-cited violation of 10 CFR 50.47(b)(8) was identified for the failure to maintain respiratory protection equipment required for emergency response activities. Specifically, from October 2004 through April 2006, the licensee failed to conduct semiannual breathing air quality surveillances for the Service Building high pressure compressor used to fill self-contained breathing air tanks maintained to support emergency preparedness activities.

This finding is greater than minor because it is associated with the response organization performance attribute of the Emergency Preparedness Cornerstone and adversely affects the cornerstone objective of ensuring the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Failure to maintain respiratory protective equipment for emergency response personnel could result in the impairment of individuals performing their specified emergency response functions. This finding was evaluated using the Emergency Preparedness Significance Determination Process and was determined to be of very low safety significance because there were no maintenance activities for the compressor system during the subject period that could potentially affect air quality, and subsequent breathing air test results conducted in April 2006 met Grade D air standards. The licensee has entered this finding in its corrective action program as Problem Evaluation Report Number 100604 and is evaluating corrective action to be taken.

Inspection Report# : [2006003\(pdf\)](#)

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## Occupational Radiation Safety

G**Significance:** Jun 30, 2006

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to establish controls in such a way as does not prevent individuals from exiting a high radiation area**

A self-revealing non-cited violation of 10 CFR 20.1601(d) was reviewed by the inspectors for failure to establish controls in a way that does not prevent individuals from exiting a high radiation area. This event involved workers being locked inside the containment.

The finding is greater than minor because it is associated with the program and process attribute of the Occupational Radiation Safety Cornerstone and adversely affects the cornerstone objective of ensuring the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Failure to maintain a means of egress from a posted high radiation area could result in radiation exposures that are only limited by the actual dose rates and the period of time that the individuals remain in the area. This finding was evaluated using the Occupational Radiation Safety Significance Determination Process and was determined to be of very low safety significance because the individuals were able to wait in a relatively low dose waiting area and the period in which they were locked in was relatively short (25 minutes). The licensee has entered this finding in its corrective action program as Problem Evaluation Report Number 96865 and has established corrective actions which should reduce the likelihood of reoccurrence.

Inspection Report# : [2006003\(pdf\)](#)G**Significance:** Jun 30, 2006

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to use procedural controls to control occupational exposure**

A self-revealing non-cited violation of 10 CFR 20.1101(b) was reviewed by the inspectors for failure to use, to the extent practical, procedural and engineering controls based on sound radiation protection principles to achieve occupational doses that are as low as reasonably achievable. The Radiation Work Permit (RWP) used for setting the reactor head was not revised to reflect a change in work scope and radiological conditions. The workers were allowed to exceed their electronic dosimeters dose and dose rate alarm settings which resulted actual dose received greatly exceeding RWP allowances.

This finding is more than minor because it is associated with the program and process attribute of the Occupational Radiation Safety Cornerstone and adversely affects the cornerstone objective of ensuring the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The failure by radiation protection personnel to properly evaluate the change in work scope and conditions and to follow established procedural requirements resulted in three individuals exceeding RWP dose limits. This finding was evaluated using the Occupational Radiation Safety Significance Determination Process and was determined to be of very low safety significance because the individuals did not exceed regulatory dose limits and the licensee's three year rolling average for occupational exposure is less than 135 rem. The licensee has entered this finding in its corrective action program as Problem Evaluation Report Numbers 90814, 91648, and 92759 and has implemented corrective actions. The cause of the finding is related to the cross-cutting element of human performance, in that, individuals were allowed to continue working with dosimeters in alarm and outside RWP requirements for exposure control.

Inspection Report# : [2006003\(pdf\)](#)

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## Public Radiation Safety

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## Physical Protection

[Physical Protection](#) information not publicly available.

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## Miscellaneous

Last modified : August 25, 2006