

Watts Bar 1

3Q/2009 Plant Inspection Findings

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

jPerforming 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*)

Mitigating Systems

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*)

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 (CO₂) 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*)

Barrier Integrity

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:  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 40A3.1.b.2)

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

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance:  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 4OA2.a.3.ii)

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

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*)

Last modified : December 10, 2009