

Watts Bar 1

3Q/2011 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate corrective action involving the failure of a shutdown board to transfer

The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for the licensee's repeat occurrence of a level A problem evaluation report (PER) 176604 written July 17, 2009.

The licensee's failure to ensure that all corrective actions for A level PER 176604 were complete is 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, the subject safety-related breaker could have been installed in a more critical application or have been installed for a longer period of time, up to 18 months, in the alternate feeder application. Additionally, the finding was associated with the configuration control attribute of the Initiating Events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using the Phase I screening worksheet of IMC 0609, the inspectors determined that the finding was of very low safety significance (Green) because it would not contribute to both a reactor trip and the likelihood that mitigation equipment or functions would not be available. The cause of the finding was directly related to the cross-cutting aspect for appropriate corrective actions to address safety issues in a timely manner commensurate with their safety significance and complexity in the Corrective Action Program component of the cross-cutting area of Problem Identification and Resolution, in that the licensee failed to take adequate corrective actions to prevent repetition of the fast transfer switch mal-adjustment. Specifically, effective corrective actions to preclude repetition were not implemented but signed as completed when the 1A shutdown board alternate feeder breaker was placed in service. (P.1(d)) (See Section 4OA2)

Inspection Report# : [2011004](#) (*pdf*)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to adequately control non-conforming or degraded equipment

The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XV, Nonconforming Materials, Parts, or Components, for the licensee's failure to ensure that 6.9Kv breaker 0-BKR-569-4605025-S, which had been identified as defective, was not labeled or otherwise segregated to prevent it from being installed into the plant.

The licensee's failure to ensure that defective 6.9Kv breaker 0-BKR-569-4605025-S was not installed into the plant is 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, the subject safety-related breaker could have been installed in a more critical application or have been installed for a longer period of time, up to 18 months, in the Alternate Feeder application. Additionally, the finding was associated with the configuration control attribute of the Initiating Events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using the Phase I screening worksheet of IMC 0609, the inspectors determined that the finding was of very low safety significance (Green) because it would not contribute to both a reactor trip and the likelihood that mitigation equipment or functions would not be available. The cause of the finding was directly related to the cross-cutting aspect that the licensee ensure supervisory and management oversight of work activities in the Work Practices component of the cross-cutting area of Human Performance, in that the licensee failed to ensure that a defective component was not installed into the plant. H.4(c) (Section 4OA2)

Mitigating Systems

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to fully implement corrective actions for a motor boat necessary for flood mode preparation

The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for the licensee's failure to fully implement corrective actions to address a motor boat necessary for flood mode preparation in accordance with Abnormal Operating Instruction (AOI) 7.01, Maximum Probable Flood. As a result the inspectors found that the boat was not in serviceable condition, and there was no procedure to address preventive maintenance of the boat. The licensee entered the issue into the corrective action program as PER 417920 and developing a long-term maintenance strategy.

The licensee's failure to fully implement corrective actions to address a motor boat necessary for flood mode preparation in accordance with AOI 7.01, was a performance deficiency. The inspectors reviewed IMC 0612 and determined that the finding was more than minor because of the lack of an important piece of equipment (motor boat) necessary for coping with the probable maximum flood (PMF) impact on Unit 1. Using the Phase I screening worksheet of IMC 0609, the inspectors determined that the finding was of very low safety significance (Green) because the licensee would have sufficient warning (27 hours) to obtain a replacement boat before it would be impacted by a PMF event. 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 taking appropriate corrective actions to address a safety issue in a timely manner commensurate with its safety significance and complexity. Specifically, the licensee failed to fully implement corrective actions to address a motor boat necessary for flood mode preparation in accordance with AOI 7.01. (P.1(d)) (See Section 1R01)

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to fully implement corrective actions for the unapproved storage of oil in a safety related area

The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for the licensee's failure to fully implement corrective actions to address the unapproved storage of a large quantity of oil in a safety-related area of the auxiliary building in accordance with the approved Fire Protection Plan (FPP). As a result, a drum containing approximately 38 gallons of new hydrocarbon oil was relocated, but not removed from a safety-related area of the auxiliary building, without addressing the FPP requirement for an approved transient combustible evaluation. The licensee entered the issue into the corrective action program as PER 380910 and PER 388926. The remaining oil was removed from the affected room or identified with an approved transient combustible evaluation.

The licensee's failure to fully implement corrective actions to address the unapproved storage of a large quantity of oil in a safety-related area of the auxiliary building in accordance with the approved FPP is a performance deficiency. The inspectors reviewed IMC 0612 and determined that the finding was more than minor because it affected the Protection Against External Factors attribute (i.e., fire) of the Mitigating Systems cornerstone, in that it affected the objective of ensuring availability, reliability, and capability of systems that respond to initiating events. Because the finding increased the fire loading due to an increase in the volume of the predominant combustible in the area, the inspectors completed a SDP Phase I analysis that indicated that the finding was not a major degradation of fire prevention or administrative controls. Using the Phase I screening worksheet of IMC 0609, the inspectors determined that the finding was of very low safety significance (Green). The cause of the finding had a cross-cutting aspect in the area of human performance associated with the work practices component. It was directly related to the licensee defining and effectively communicating expectations regarding procedural compliance and personnel follow procedures. [H.4(b)] Specifically, the licensee failed to follow the control of transient combustibles procedure by allowing the unapproved storage of a large quantity of oil in a safety-related area of the auxiliary building. (See

Inspection Report# : [2011004](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Ensure The Operability of an Emergency Battery Lighting Unit in Accordance with the Approved Fire Protection Plan

The inspectors identified an NCV of the Unit 1 Operating License Condition 2.F for the licensee's failure to maintain the operability of Appendix R emergency lighting in accordance with the approved Fire Protection Plan (FPP). Specifically, both lamps for an Appendix R emergency light in the Unit 2B 480 volt transformer room were not aimed in the direction required by design to accomplish the operator manual action to restore outside air ventilation to the room in the event of a fire, as required by the FPP. The licensee implemented compensatory measures and entered this issue into the corrective action program as Problem Evaluation Report (PER) 341645.

The finding was determined to be more than minor because it affected the protection against external events attribute of the Mitigating Systems cornerstone, in that it affects the objective of ensuring reliability and capability of systems that respond to initiating events. This finding was evaluated using Inspection Manual Chapter (IMC) 0609, Appendix F, Attachment 1, and was determined to be of very low safety significance because it was not a major degradation of FSSD capability. The cause of the finding was directly related to the cross-cutting aspect of Effective Supervisory/Management Oversight in the Work Practices component of the area of Human Performance, in that the licensee did not ensure oversight of work activities that adversely affected the operability of Appendix R emergency lighting (H.4 (c)).

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

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Procedure AOI-30.2 C.36, Fire Safe Shutdown Room 737-A1A, Non-feasible Operator Manual Action

The inspectors identified an NCV of Technical Specification 5.7.1, Procedures, for the licensee's failure to maintain a plant procedure to ensure that an operator manual action for fire safe shutdown (FSSD) could be feasibly performed under the current physical plant configuration. Specifically, post-fire safe shutdown procedure AOI-30.2 C.36, Revision 3, contained instructions for an operator manual action for FSSD that could not be feasibly performed following implementation of a plant design change. The licensee took immediate corrective action to install a temporary scaffold as a compensatory measure. The licensee entered this issue into the corrective action program as PER 356563

The finding was determined to be more than minor because it affected the protection against external events attribute of the Mitigating Systems cornerstone, in that it affects the objective of ensuring reliability and capability of systems that respond to initiating events. This finding was evaluated using IMC 0609, Appendix F, Attachment 1, and was determined to be of very low safety significance because the procedure step in question was not a time-critical step. The cause of the finding was directly related to the cross-cutting aspect of Work Activity Coordination in the Work Control component of the area of Human Performance, in that the licensee failed to appropriately coordinate work activities, consistent with nuclear safety, to ensure that changes to the physical plant configuration would not adversely affect the feasibility of operator manual actions (H.3 (b)).

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

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform a Transient Combustible Evaluation for Storage of Oil in a Safety Related Area in Accordance with the Approved Fire Protection Plan

The inspectors identified an NCV of the Unit 1 Operating License Condition 2.F for the licensee's failure to store

transient combustible materials in a safety-related/critical area of the auxiliary building in accordance with the approved FPP. Specifically, approximately 38 gallons of hydrocarbon oil was stored inside the entrance labyrinth of the 1B charging pump room without an approved transient combustible evaluation, as required by the FPP. As a result, this was an unapproved increase in fire loading due to an increase in the volume of the predominant combustible material in the area. The licensee took immediate corrective action to remove the drum of oil from the area. The licensee entered this issue into the corrective action program as PER 371383 and PER 380910.

The finding was determined to be more than minor because it affected the protection against external events attribute of the Mitigating Systems cornerstone, in that it affects the objective of ensuring reliability and capability of systems that respond to initiating events. This finding was evaluated using IMC 0609, Appendix F, Attachment 1, and was determined to be of very low safety significance because it represents a low degradation of fire prevention and administrative controls. The cause of the finding was directly related to the cross-cutting aspect of Proper Work Planning in the Work Control component of the area of Human Performance, in that the licensee failed to appropriately plan work activities to minimize the risk associated with a large quantity of oil in a safety-related fire zone without compensatory measures (H.3 (a)).

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

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Translate Moderate Energy Line Break Study Output into a Plant Procedure

Three inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, Design Control for the licensee's failure to correctly translate a design document into operating procedures. Specifically, from original Licensing until the beginning of this reporting period, the licensee failed to translate into procedures guidance that would ensure that the plant could be safely shut down following a non-isolable break in the piping connecting the refueling water storage tank (RWST) to the emergency core cooling system in the auxiliary building. The licensee entered this issue into the corrective action program as PER 341568 and corrective actions have been completed to address the issue.

This finding was determined to be more than minor because it adversely affected the Mitigating Systems cornerstone attribute of procedure quality and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, flood protection was degraded due to a lack of procedures to mitigate flooding from the RWST into the auxiliary building with accompanying damage to both trains of the containment spray motors. This finding was evaluated using the SDP Phase 1 screening criteria in accordance with IMC 0609, Attachment 4, and was determined to require a Phase 3 analysis. The phase 3 analysis was performed by regional SRA's and determined to be of very low safety significance. The cause of the finding extends back to original plant licensing. Therefore, it is not related to current performance and is not assigned a cross-cutting aspect.

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

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to establish adequate compensatory measures for a degraded sprinkler system in accordance with the approved fire protection plan

The inspectors identified a NCV of the Unit 1 Operating License Condition 2.F for the licensee's failure to establish adequate compensatory measures for an impaired sprinkler system in accordance with the approved Fire Protection Plan (FPP). Specifically, a solid scaffold platform had been erected below the preaction sprinkler system protecting the 1B Charging Pump oil system without establishing compensatory measures, as required by the FPP. As a result, the capabilities of the sprinkler system protecting the 1B Charging Pump oil system were impaired from performing their designed function. The licensee entered this issue into the corrective action program as PER 332853.

The finding was determined to be more than minor because it affected the Protection Against External Factors attribute of the Mitigating Systems cornerstone, in that it impacted automatic fire suppression capability and affected the cornerstone objective of ensuring the availability of systems that respond to external events. This finding was evaluated using IMC 0609, Appendix F, Attachment 1, and was determined to be of very low safety significance

because it represented a low degradation of the fixed fire suppression systems. 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's not planning and coordinating work activities consistent with nuclear safety to ensure that adequate compensatory actions were established for a degraded sprinkler system (H.3 (a)). Section 1R05

Inspection Report# : [2011002](#) (pdf)

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to ensure adequacy of AOI-13, loss of essential raw cooling water, revision 0038

The inspectors identified a NCV of Technical Specification 5.7.1, Procedures, for the licensee failure to establish and implement an adequate Abnormal Operating Instruction (AOI) to address flooding in the Auxiliary Building from a pipe break in the Essential Raw Cooling Water System (ERCW). As a result, the inadequate procedure would have resulted in the increased flooding from an ERCW header leak. The licensee entered this issue into the corrective action program as PER 339112.

The inspectors determined that the performance deficiency was more than minor, and therefore a finding, because it would have the potential to lead to a more significant safety concern if left uncorrected, in that, use of the inadequate procedure could have resulted in increased flooding from an ERCW pipe break. This finding was evaluated using the significance determination phase 1 screening criteria in accordance with IMC 0609, Attachment 4 and was determined to be of very low safety significance because the finding did not involve the total loss of any safety function, identified by the licensee through a PRA, IPEEE, or similar analysis, that contributes to the external event initiated core damage accident sequences. No cross-cutting aspect was assigned to this finding because it was not determined to be indicative of current licensee performance. (Section 1R06)

Inspection Report# : [2011002](#) (pdf)

Significance:  Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to adequately monitor the performance of the B MCR air conditioning train under 10 CFR 50.65

•Green. The inspectors identified a non-cited violation of 10 CFR 50.65(a)(2), was identified by the inspectors for the licensee's failure to set goals and monitor the performance and condition of the B Main Control Room (MCR) Air Conditioning system as required by 10CFR50.65(a)(1), and had no justification for not doing so, after it had failed to demonstrate effective control of the performance or condition of the system through appropriate preventive maintenance. The inspectors identified three Component Deficiency Reports that documented failures which had been evaluated by the licensee as non-functional failures. The licensee has subsequently implemented goal setting and monitoring requirements specified in 10 CFR 50.65(a)(1) and entered this issue into the corrective action program as PER 205438.

The inspectors determined that this finding was more than minor since the B MCR Air Conditioning Train was not placed in (a)(1) monitoring status in a timely manner which if left uncorrected, could become a more significant safety concern. NRC staff review has determined this MR violation to have a very low safety significance (Green) because it was not among the contributing causes of the degraded performance and condition of the B Main Control Room (MCR) Air Conditioning system and not processed through the significance determination process. The cause of the finding was directly related to the cross-cutting area of Problem Identification and Resolution, evaluation aspect of the corrective action program component, in that, the licensee failed to thoroughly evaluate failures and determine those failures to be functional failures of the B MCR Air Conditioning System such that the system was placed in category a (1) in a timely manner. P.1(c) (Section 1R12)

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

Significance:  Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to adequately qualify molded-case circuit breakers to safety-related application through commercial grade dedication.

•Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for the failure to assure that appropriate quality standards were specified and included in design documents and that deviations from such standards were controlled. Specifically, the licensee failed to demonstrate the necessary conditions for commercial grade dedication and seismic qualification of molded case circuit breakers to safety-related application within the station 120VAC vital instrumentation boards. Corrective actions for this issue are still being evaluated and has been entered into the licensee's corrective action program as PER 171695.

Failure to specify appropriate qualification standards in performing commercial grade dedication of a component-level commodity is a performance deficiency. This performance deficiency is more than minor and a finding because it affected the design control attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, adequate measures were not implemented to ensure the station 120VAC vital instrumentation boards were properly seismically qualified for their application. The inspector assessed the finding using the SDP and determined that the finding was of very low safety significance (Green) because the breaker panels had originally been qualified by testing a complete prototype panel, while the licensee's processes replaced a component-level item within that panel utilizing the original make and model component through commercial grade dedication. The inspectors concluded that overall operability was not brought into question.

This finding was reviewed for cross-cutting aspects and none were identified, as it was determined not to reflect current licensee performance. (Section 40A5.2)

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

Significance: G Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to use worst case 6900 VAC bus voltage in design calculations

•Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for the failure to assure that applicable regulatory requirements and the design basis for structures, systems, and components are correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to assure that applicable regulatory requirements for undervoltage (degraded) voltage protection, including those prescribed in TS 3.3.5-1, item 2, were correctly translated into design calculation, WBN-EEB-MS-TI-06-0029, "Degraded Voltage Analysis," Revision. 31, which evaluated motor starting voltages at the beginning of a design basis loss of coolant accident (LOCA) concurrent with a degraded grid condition. Corrective actions for this issue are still being evaluated and has been entered into the licensee's corrective action program as PER 296306.

The failure to use the degraded voltage relay setpoint values as specified in TS and configured in the 6900 VAC bus based on the electrical design calculation was a performance deficiency. This finding is more than minor because it affects the Design Control attribute of the Mitigating Systems Cornerstone. It impacts the cornerstone objective of ensuring the availability, reliability, and operability of the 6900 VAC safety buses to perform the intended safety function during a design basis event. The potential availability, reliability, and operability of the 6900 VAC safety buses during a potential degraded voltage condition was impacted as the licensee design calculation used a non-conservative degraded voltage input, with respect to the values specified in TS, into their safety-related motor starting and running calculations. The inspectors assessed the finding using the SDP and determined that the finding was of very low safety significance (Green) because the finding represented a design deficiency confirmed not to result in the loss of functionality of safety-related loads due to the availability of related transformer load tap changers (LTCs) that were installed to improve a degraded voltage condition.

The inspectors reviewed the performance deficiency for cross-cutting aspects and determined that none were applicable since this performance deficiency was not indicative of current licensee performance as the design calculation discussed above was not recently performed. (Section 40A5.3)

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

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

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

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