

Watts Bar 1

4Q/2010 Plant Inspection Findings

Initiating Events

Mitigating Systems

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:  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*)

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to assure that adequate test requirements were developed and implemented following a repair.

The inspectors identified a NCV of TS 5.7.1, Procedures, for the licensee failing to develop and implement an adequate post-maintenance test procedure for valve 0-CKV-067-0502C, air release valve for C ERCW pump, resulting in the valve not being fully tested following rebuild per work order (WO) 07-820358-000. The licensee entered these issues into the corrective action program as PER 228680

The licensee's failure to develop and implement an adequate post-maintenance test was determined to be a performance deficiency. The performance deficiency was determined to be 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, failing to ensure that adequate procedures are developed and implemented could allow risk-significant equipment to unknowingly be returned to service in a degraded condition. 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 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 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, personnel failed to recognize the impact of changing the scope of the PMT. As a result, an inadequately tested valve was placed into service.

Inspection Report# : [2010003](#) (*pdf*)

Significance:  Jun 30, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Lack of procedure implementation results in 1B EDG being started with 15 cylinder plugs open.

A self-revealing, non-cited violation (NCV) of Technical Specifications (TS) 5.7.1, Procedures, was identified for the licensee's failure to adhere to OPDP-1, Conduct of Operations, Section 5.1, Procedure Adherence, resulting in the 1B Emergency Diesel Generator being returned to service with 15 cylinder valves open. The licensee entered this issue into the corrective action program as problem evaluation report (PER) 232018.

Failing to ensure that safety-related equipment was properly returned to service was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was evaluated using the Significance Determination Process Phase I and was determined to be a finding of very low safety significance because the valve mispositioning was found and corrected in less than the TS allowable outage time. The cause of the finding was directly related to the cross-cutting area of the human performance, error prevention aspect of the work practices component, in that, the licensee failed to ensure that personnel did not proceed in the face of uncertainty when one of the cylinder valves was determined to be in the incorrect position [H.4(a)].

Inspection Report# : [2010003](#) (*pdf*)

Significance:  Apr 27, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate assessment of seismic qualification of ERCW strainers

The team identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, Design Control, for the licensee's failure to update ERCW strainer mounting (seismic/structural) calculations to reflect the as-built conditions, a failure which was allowed to exist since commercial operations began. This calculation was then used in making acceptance conclusions for a modification installed in recent months. The licensee entered this condition into their corrective action program as Problem Evaluation Reports (PERs) 221018, 220754, and 223677 and took immediate actions to determine the seismic acceptability of the current installation, utilizing calculational conclusions of a similar installation at the licensee's Sequoyah Nuclear Plant.

The finding was determined to be more than minor because it was associated with the design control attribute within the Mitigating System's cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, in that there was reasonable doubt as to the operability of the ERCW strainers as a result of the performance deficiency. The team evaluated the finding to be of very low safety significance (Green) utilizing IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings" worksheet, as it was a calculational error subsequently determined to not result in an operability issue. No cross-cutting aspect was identified since the issue was not reflective of current licensee performance. (Section 1R21.2.5)

Inspection Report# : [2010006](#) (*pdf*)

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 4OA2.2)

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

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 40A5.2)

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

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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