

Watts Bar 1

4Q/2014 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2014

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Perform an Adequate Post Maintenance Test Results in Draining of the Unit 1 RWST to a Level Below Technical Specification Limit (Section 1R19)

A Green self-revealing finding was documented by the inspectors for the licensee's failure to adequately perform a post maintenance test for Design Change Notice (DCN) 60683, Stage 8, resulting in draining approximately 3300 gallons of radioactive contaminated water from the Unit 1 refueling water storage tank into the auxiliary building. The inspectors determined that the licensee's failure to implement an adequate post maintenance test for DCN 60683, install new connections for Fukushima modifications, as required by NPG-SPP-06.9.3, Revision 5, Plant Modification Testing, was a performance deficiency.

The performance deficiency was determined to be more than minor because it adversely affected the Design Control attribute of the Mitigating Systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to implement an adequate post maintenance test resulted in the inoperability of the Unit 1 RWST. Using the screening worksheet of IMC 0609, Appendix A, Exhibit 2 – Mitigating Systems Screening Questions, the inspectors determined that the finding was of very low safety significance (Green) because the resulting loss of Unit 1 RWST inventory was restored within the Technical Specification allowable time. The cause of the finding was directly related to the aspect of work management in the Human Performance cross-cutting area because the licensee failed to implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. [H.5] (Section R19)

Inspection Report# : [2014004](#) (*pdf*)

Significance:  Jun 30, 2014

Identified By: NRC

Item Type: FIN Finding

Failure to comply with design drawing results in a reactor trip

An NRC-identified finding was documented by the inspectors for the licensee's failure to comply with a design drawing during a modification resulting in a trip of Unit 1 reactor.

The inspectors determined that the licensee's failure to properly implement Design Change Notice (DCN) 52295, complete bus differential wiring for main bus 2, as required by NPG-SPP-09.3, Revision 17, Plant Modifications and Engineering Change Control, was a performance deficiency. The performance deficiency was determined to be more than minor because it adversely affected the objective of the Initiating Events cornerstone to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to correctly translate design drawings to implementing work order 08-816022-006 resulted in Unit 1 experiencing a 100% load rejection and reactor trip. Using the screening worksheet of IMC 0609, Appendix A, Exhibit 1 - Initiating Events Screening Questions, the inspectors determined that the finding was of very low safety significance (Green) because the resulting transient was within the design basis for Unit 1 and all plant systems functioned as required to place the unit in a stable, hot standby condition. The cause of the finding was directly related

to the aspect of work management in the Human Performance cross-cutting area because the licensee failed to implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. [H.5] (Section 40A3)

Inspection Report# : [2014003](#) (pdf)

Mitigating Systems

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Assure Qualification Testing Met Specified Requirements

The inspectors identified a Green NCV of 10 CFR Part 50 Appendix B Criterion VII for the licensee's failure to assure that purchased chillers for the main control room (MCR) and shutdown board room (SDBR) conformed to the procurement documents. Specifically, the equipment qualification documentation provided for the MCR and SDBR chillers did not provide sufficient evidence to reasonably conclude the equipment would be able to perform its active safety function of heat control before, during, and after the analyzed safe shutdown earthquake.

The inspectors determined that the licensee's failure to meet procurement specification SL M-0024-0 for qualification of MCR and SDBR chillers was a performance deficiency. The cause was reasonably within the licensee's ability to foresee and correct and should have been prevented.

The performance deficiency was more than minor because, if left uncorrected, the condition had the potential to lead to a more significant safety concern. The main control room chillers were required to assure habitability was maintained for mitigation and control of analyzed accidents. Because no further equipment qualification activities were planned, the capability of the main control room and shutdown board room cooling equipment to withstand an analyzed earthquake would continue to be indeterminate after installation and placement into service. The NRC concluded that the finding was of very low safety significance (Green) because the chillers had not been installed. The inspectors determined that the finding was directly related to the cross-cutting aspect in the area of Problem Identification and Resolution because the licensee did not take effective corrective actions to address issues in a timely manner commensurate with their safety significance (P.3).

Inspection Report# : [2014005](#) (pdf)

Significance:  Sep 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to follow scaffold procedure impacts Appendix R operator manual actions (Section 1R05)

The inspectors identified a Green non-cited violation (NCV) of 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion V, for the licensee's failure to follow procedure MMTP-108, Erection of Scaffolds/Temporary Work Platforms and Ladders, Revision 8. Specifically, on August 18, 2014, a scaffold was erected in the 1B-B charging pump room and Operations personnel failed to adequately evaluate the scaffold for plant equipment access impairments as required by the procedure. The inspectors determined that the licensee's failure to adequately evaluate the completed scaffold for plant equipment access/operability/impairments as required by MMTP-108, Erection of Scaffolds/Temporary Work Platforms and Ladders, Revision 8, was a performance deficiency.

The performance deficiency was determined to be more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent

undesirable consequences. Specifically, the finding had the potential to affect the feasibility of performing operator manual actions (OMAs) required for fire safe shutdown in the event of a fire. The finding was evaluated using IMC 0609 Appendix F, Fire Protection Significance Determination Process, dated September 20, 2013, and was determined to require a detailed risk analysis because evaluation was beyond the scope of IMC 0609 Attachment 1, Fire Protection Significance Determination Process Worksheet, Phase 2 Quantitative Screening Approach. A bounding analysis was performed by a regional senior reactor analyst using the guidance of IMC 0609, Appendix F because the finding affected the ability to reach and maintain safe-shutdown conditions in case of fire. The analysis determined that the risk associated with the performance deficiency represented an increase in core damage frequency of less than 1E-6/year, a finding of very low safety significance (Green). The cause of the finding was directly related to the aspect of Conservative Bias in the Human Performance cross-cutting area because the licensee failed to use decision making practices that emphasize prudent choices over those that are simply allowable when performing the scaffold evaluation. [H.14] (Section 1R05)

Inspection Report# : [2014004](#) (*pdf*)

Significance:  Jun 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to correct a condition adverse to quality

An NRC-identified NCV of 10 Code of Federal Regulations (CFR) 50 Appendix B, Criterion XVI, Corrective Action, was documented for the licensee's failure to adequately identify a condition adverse to quality associated with the installation of 480 volt breaker 0-BKR-548-0021-S with non-conforming parts which was in service in safety-related 480 volt shutdown board 1B1.

The inspectors determined that the licensee's failure to adequately identify a condition adverse to quality associated with the installation of non-conforming parts as required by 10 CFR 50 Appendix B, Criterion XVI, was a performance deficiency. The performance deficiency was determined to be more than minor because it adversely affected the objective of the Mitigating Systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to identify the condition adverse to quality led to an additional six months that this non-conforming condition existed thus reducing the licensee's ability to ensure the reliability and capability of plant safety systems. Using the screening worksheet of IMC 0609, Appendix A, Exhibit 2 – Mitigating Systems Screening Questions, the inspectors determined that the finding was of very low safety significance (Green) because the deficiency only affected the qualification of the breaker. The cause of the finding was directly related to the aspect of identification in the Problem Identification and Resolution cross-cutting area because the licensee did not identify this issue completely, accurately, and in a timely manner in accordance with the program. [P.1] (Section 4OA2.3)

Inspection Report# : [2014003](#) (*pdf*)

Significance:  Jun 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to evaluate a condition adverse to quality

A NRC-identified non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action, was documented for the licensee's failure to adequately identify a condition adverse to quality associated with the installation of relief valve 1-RFV-67-1026D, Upper Containment Cooler 1D, an ASME Class III component.

The inspectors determined that the licensee's failure to adequately identify a condition adverse to quality associated with the non-conformance of relief valve 1-RFV-67-1026D, as required by 10 CFR 50 Appendix B, Criterion XVI, was a performance deficiency. The performance deficiency was determined to be more than minor because it adversely affected the objective of the Mitigating Systems cornerstone to ensure the availability, reliability, and

capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to correct the condition adverse to quality in a timely manner led to an additional 4 years that this non-conforming condition existed prior to evaluation thus reducing the licensee's ability to ensure the reliability and capability of plant safety systems. Using the screening worksheet of IMC 0609, Appendix A, Exhibit 2 – Mitigating Systems Screening Questions, the inspectors determined that the finding was of very low safety significance (Green) because there existed an additional relief valve in the IST program that could protect the piping and cooler from over pressurization with appropriate compensatory measures. The cause of the finding was directly related to the aspect of evaluation in the Problem Identification and Resolution cross-cutting area because the licensee did not adequately evaluate this issue to ensure that an adequate resolution addressed the condition commensurate with its safety significance. [P.2] (Section 4OA2.4)

Inspection Report# : [2014003](#) (*pdf*)

Significance:  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to correct a condition adverse to quality

An NRC-identified non-cited violation (NCV) of 10 Code of Federal Regulations (CFR) 50 Appendix B, Criterion XVI, Corrective Action, was documented for the licensee's failure to correct a condition adverse to quality associated with the inadequate performance of a safety related maintenance instruction. Specifically, the licensee closed Problem Evaluation Report (PER) 858636 which documented the failure to perform step 6.3 of procedure 0-MI-0.007, without taking corrective actions to correct the condition. The licensee has entered this issue into their corrective action program as PER 867402.

The performance deficiency was determined to be more than minor because it adversely affected the objective of the Mitigating Systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to correct a condition adverse to quality associated with the licensee's ability to trend valve degradation reduced the licensee's ability to ensure the reliability and capability of plant safety systems. Using the screening worksheet of IMC 0609, Appendix A, Exhibit 2 – Mitigating Systems Screening Questions, the inspectors determined that the finding was of very low safety significance (Green) because the essential air system remained functional following the maintenance activity. The cause of the finding was directly related to the cross-cutting aspect of Problem Identification and Resolution, Corrective Action Program, because the licensee did not thoroughly evaluate this problem, identify the causes, develop appropriate corrective actions, and evaluate the extent of condition. [P.2] (Section 4OA2.2)

Inspection Report# : [2014002](#) (*pdf*)

Significance:  Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to comply with technical specification 3.7.5, auxiliary feedwater system

A self-revealing NCV of TS 3.7.5, Auxiliary Feedwater (AFW) System, was documented for the licensee's failure to ensure that three fully qualified, independent trains of AFW were operable in Modes 1, 2 and 3. Specifically, the licensee failed to ensure the safety-related air supply to 1- LCV-3-156 and 1-LCV-3-164, for the 1A AFW train was available, from October 22, 2012, until January 24, 2014. The licensee restored operability of the valves and entered this issue into their corrective action program as PER 838494.

The performance deficiency was determined to be more than minor because it would have the potential to lead to a more significant safety concern if left uncorrected, in that, isolation of control air from the level control valves left the

nitrogen supply system as the motive force for the valves which did not meet all of the necessary design qualifications required to maintain operability of the 1A AFW train. This finding was evaluated using the SDP Phase 1 screening criteria and IMC 609 Appendix A, Exhibit 2 – Mitigating Systems Screening Questions, and was determined to be of very low safety significance because the finding did not involve the total loss of system or function and the affected 1A train valves fail to the open position. The cause of the finding was directly related to the cross-cutting aspect in the Work Practices component of the area of Human Performance, in that the licensee failed to provide adequate supervisory and management oversight to ensure that the control air valves were placed in the correct position. [H.2] (Section 4OA3.3)

Inspection Report# : [2014002](#) (*pdf*)

Barrier Integrity

Significance:  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to follow plant procedures for replacement of NAMCO limit switches

An NRC-identified NCV of Technical Specification (TS) 5.7.1, Procedures, was documented for the licensee's failure to follow plant procedures which resulted in the undocumented modification of the upper NAMCO limit switch for valve 1-FCV-61-110-A, Glycol Outlet Containment Isolation Valve. The licensee planned replacement of the switch and entered this issue into their corrective action program as PER 857020. This performance deficiency was determined to be more than minor because it was associated with the Design Control attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to follow the proper plant procedures led to an unauthorized plant modification which reduced the ability of the licensee to provide assurance that a containment isolation valve would perform as designed. Using the screening worksheet of IMC 0609, Appendix A, Exhibit 3 – Barrier Integrity Screening Questions, the inspectors determined that the finding was of very low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment and did not involve an actual reduction in the function of the hydrogen igniters in the reactor containment. The cause of the finding was directly related to the cross-cutting aspect that the licensee define and effectively communicate expectations regarding procedural compliance and that personnel follow procedures in the Work Practices component of the cross-cutting area of Human Performance, in that the licensee failed to ensure that the proper limit switch was installed on 1-FCV-61-110-A. [H.8]

Inspection Report# : [2014002](#) (*pdf*)

Emergency Preparedness

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain Effectiveness of Emergency Plan

A self-revealing non-cited violation (NCV) of 10 CFR 50.54(q)(2) was identified for the licensee's failure to maintain 1-RM-90-404 A/B radiation monitors as required by their Radiological Emergency Plan and NRC-approved

Emergency Action Level scheme. The issue was placed in the licensee's corrective action program and the radiation monitors are being replaced under a design change on an expedited schedule.

The licensee's failure to identify the extended loss of the Unit 1 Watts Bar Nuclear Power Plant's 1-RM-90-404 A&B CVE Radiation Monitors was not compliant with their approved emergency plan and was a failure to comply with 10 CFR 50.54(q)(2), was more than minor because it was associated with the Facilities and Equipment attribute of the Reactor Safety – Emergency Preparedness Cornerstone and adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency in that equipment relied upon to prompt decision-makers to declare emergencies was not available. The finding was determined to have very low safety significance (Green) because alternative Emergency Action Levels within the radiological effluent initiating condition, facility design as documented in their Updated Final Safety Analysis Report, and the licensee's declaration processes, were such that an accurate and timely declaration would have been made. This finding had a cross-cutting aspect of Evaluation in the Problem Identification and Resolution component. The TVA failed to thoroughly evaluate the impact of the long term unavailability of the 1-RM-90-404A/B radiation monitors on the emergency plan. Specifically, since these radiation monitors are used to make site area and general emergency declarations, their continued long term unavailability presented a potentially safety significant concern. The licensee failed to identify this concern as an Emergency Preparedness issue and failed to take timely corrective actions to restore the failed radiation monitors (P.2). (Section 1EP5)

Inspection Report# : [2014501](#) (*pdf*)

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

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