

Turkey Point 4 4Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Inadequate Procedure to Realign Steam Supply to the Gland Sealing Steam System

Green. A self-revealing non-cited violation (NCV) of Technical Specification (TS) 6.8.1, "Procedures", was identified for the licensee's failure to maintain an adequate procedure for gland sealing steam supply realignment. Specifically, the licensee failed to have initial conditions in place in the procedure that provided specific direction that steam supply to the gland sealing system cannot be transferred from the main steam system to the auxiliary steam system with a unit in Mode 1 or 2. The licensee took corrective action to add initial conditions to procedure 4-GOP-103 that would not allow gland seal system steam supply realignment while in Modes 1 or 2. The licensee entered this issue into their corrective action program (CAP) as action request (AR) 1967899.

The performance deficiency was more than minor because it was associated with the procedure quality attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, the failure to have specific guidance in procedure 4-GOP-103 that prevented realigning the gland sealing steam supply while in Mode 1 or 2 resulted in lowering condenser vacuum and a subsequent reactor trip on low condenser vacuum when the gland sealing steam supply was being realigned with Unit 4 in Mode 1. The inspectors screened the finding using Attachment 4 to NRC Inspection Manual Chapter (IMC) 0609 and determined that the finding was a transient initiator contributor which required evaluation using Exhibit 1, "Initiating Events Screening Questions," of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power" (July 19, 2012). The inspectors determined that the finding was of very low safety significance (Green) because the performance deficiency did not result in a reactor trip and loss of mitigating equipment relied upon to transition the plant to a safe shutdown condition. The finding was associated with a cross-cutting aspect in the resources component of the human performance area because the licensee failed to ensure an adequate general operating procedure was available to support nuclear safety (H.1).

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

Significance: G Dec 31, 2014

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Perform an Adequate Design Verification

Green: A self-revealing finding was identified for the licensee's failure to ensure an adequate design change was implemented during Unit 3 and Unit 4 instrument air compressor system upgrade modifications completed in 2013. Specifically, plant modifications EC 246991 and EC 246990 were accepted and placed in service by the licensee without verifying the control logic configuration would function properly and load under all conditions. As a result, the diesel-driven compressors would not load and pressurize the instrument air header in the event of a loss of instrument air pressure while in the standby mode of operation. Corrective actions included an immediate modification to the standby compressor loading control circuit to ensure the machine loaded automatically and

revising general procedural guidance for compressor operation. The licensee entered this performance deficiency in their corrective action program as AR 01983607.

The performance deficiency was more than minor because it was associated with the design control attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, the failure to have an adequate design for controlling the operation of the standby instrument air compressor resulted in a reactor trip due to the loss of instrument air pressure. The inspectors screened the issue under the initiating events cornerstone using Attachment 4 (June 19, 2012) and Exhibit 1 (June 19, 2012) of Appendix A to Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (June 2, 2011). The inspectors concluded that a detailed risk evaluation would be required because the finding was associated with the loss of a support system that resulted in a reactor trip and affected equipment that could be used by plant operators to mitigate the resulting plant transient. A senior reactor analyst (SRA) performed a detailed risk evaluation of this issue. The NRC model for Turkey Point was adjusted by: 1) increasing the initiating event frequency for a loss of instrument air (LOIA) event by one order-of-magnitude, and 2) the failure-to-run probability of the backup air compressors was set equal to 1.0. The change in core damage frequency results were below the 1E-6 threshold and the issue was determined to be of very low risk significance (Green). The finding was associated with a cross-cutting aspect in the resources component of the human performance area because the licensee failed to ensure instrument air system equipment was available and adequate to support nuclear safety (H.1).

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

Significance:  Jun 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to implement a surveillance procedure to perform a RCS unidentified leak rate statistical calculation

The NRC identified a non-cited violation (NCV) of Technical Specification 6.8.1, Procedures, for the licensee's failure to implement procedure 4-OSP-041.1, Reactor Coolant System (RCS) Leak Rate Calculation. Specifically, the licensee did not perform a Unit 4 reactor coolant system leak rate statistical calculation to determine the change in the average unidentified RCS leak rate which resulted in not performing a Level 3 RCS leak rate investigation. Corrective actions included performing the calculation, performing a detailed leak investigation, and entering the performance deficiency in their corrective action program as action request 01962745.

The performance deficiency was determined to be more than minor because it was associated with the initiating events cornerstone attribute of human performance and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the inspectors determined that the licensee's failure to fully implement the procedure directly resulted in not performing an RCS Level 3 leak rate investigation. The finding was screened using IMC 0609, Significance Determination Process, Attachment 0609.04, Initial Characterization of Findings, Tables 2 and 3, dated July 1, 2012, and Appendix A, The Significance Determination Process (SDP) for Findings At-Power, Exhibit 1 for Initiating Events, dated July 1, 2012. The inspectors determined the finding was of very low safety significance because after a reasonable assessment of the degradation, the inspectors determined the finding would not have likely affected other systems used to mitigate a Loss of Coolant Accident (LOCA) resulting in total loss of their function. This finding was associated with a cross-cutting aspect in the procedure adherence component in the human performance area because the licensee failed to fully implement the RCS leak rate calculation procedure (H.8). (Section 1R22)

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

Mitigating Systems

Significance: G Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Take Adequate Corrective Actions to Correct Flow Induced Vibration Leads to CCW Piping Weld Failures.

A Green self-revealing non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified when the licensee failed to implement corrective actions that addressed the low stress high cycle fatigue of component cooling water (CCW) relief valve (RV) 4-747B piping caused by flow induced vibration. As a result, CCW system flow induced vibration resulted in weld cracks and system pressure boundary leakage in January 2014. This issue was placed in the licensee's corrective action program (CAP) as action request (AR) 1931761. Corrective actions included performing a root cause evaluation, implementing special instructions to minimize the time that split header operation is performed, and developing a plan to replace the existing relief valve with an orifice or alternate relief valve.

The performance deficiency was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to implement adequate corrective actions to address CCW system flow induced vibration resulted in weld cracks and CCW system pressure boundary leakage in January 2014. The finding was screened using Exhibit 1, Mitigating Systems Screening Questions, found in Inspection Manual Chapter 0609, Significance Determination Process, Appendix A, Significance Determination Process (SDP) for Findings At-Power (June 19, 2012). The inspectors determined the finding was of very low safety significance (Green) because the finding did not affect design or qualification, did not represent a loss of system function, and did not represent an actual loss of function of a TS train of equipment. The finding was associated with a cross-cutting aspect in the evaluation component of the problem identification and resolution area because the licensee did not thoroughly evaluate issues and corrective actions from previous weld failures on CCW system RV-4-747B piping caused by flow induced vibration (P.2). (Section 4OA2.2) Inspection Report# : [2014002](#) (*pdf*)

Significance: G Feb 28, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Properly Implement Time Critical Operator Action Program Procedure

The team identified a green non-cited violation of Technical Specification 6.8.1, "Procedures and Programs," for the licensee's failure to implement procedure 0-ADM-232, Time Critical Action Program, to ensure time critical actions (TCAs) important to mitigate design basis events could be performed in the required time. The failure to implement this procedure was a performance deficiency. No documentation existed to demonstrate that the TCA to restore power to the battery chargers during a station blackout could be performed within the required time (30 minutes). The team also identified a TCA to locally isolate the auxiliary feedwater for a faulted steam generator that did not have a job performance measure to demonstrate the successful completion of the action. The licensee entered this issue into the corrective action program as action requests 01944453, 01945532, 01943321, 01943425, and 01943697. For TCAs where no validation documentation could be determined, the licensee completed tabletop exercises, simulator exercises, and field walkdowns to ensure that all of the TCAs to mitigate design basis events could be completed within the required action times.

The performance deficiency was determined to be more than minor because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone and 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 licensee did not implement 0-ADM-232 adequately to ensure that the TCAs listed in Attachment 1 of the procedure were properly validated; consequently, the licensee could not demonstrate that TCAs could be successfully executed in accordance with the design basis. The team determined the finding to be of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; and did not represent a loss of system and/or function. The team determined this finding was associated with the cross-cutting aspect of Procedure Adherence in the area of Human Performance because although the procedure was recently revised to include all necessary requirements to maintain the time critical action program, the licensee failed to follow procedure 0-ADM-232, which resulted in several TCAs not being properly validated. [H.8] (Section 1R21.2)
Inspection Report# : [2014007](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

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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