

Sequoyah 1

4Q/2012 Plant Inspection Findings

Initiating Events

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Procedures for Tornado Watch/Warning

The inspectors identified a noncited violation of Units 1 & 2 Technical Specification of 6.8.1.a for the licensee's failure to adequately implement procedure AOP-N.02, "Tornado Watch/Warning," Revision 28. On March 2, 2012, the licensee entered AOP-N.02 due to a tornado watch/warning and failed to secure or remove loose material in the Switchyard/Transformer Yard as required by the procedure.

This issue was entered into the licensee's corrective action program as Problem Evaluation Report (PER) 515684.

Inspection Report# : [2012002](#) (*pdf*)

Significance:  Mar 11, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

Reactor Trip due to Improper Preferred Inverter Maintenance

A self-revealing finding was identified for the licensee's failure to properly implement work procedures during the performance of a preventive maintenance (PM) activity associated with the Unit 1 Preferred Inverter. The improper performance of selected steps with the system in an inappropriate configuration to support the activity caused an electrical transient and loss of the preferred power board which resulted in a turbine trip and automatic reactor trip. The licensee entered this issue into their corrective action program as PER 405141 and implemented corrective actions to include guidance for operations supervisory review of work documents prior to returning equipment to service.

Inspection Report# : [2012007](#) (*pdf*)

Mitigating Systems

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to implement freeze protection program requirements

A NRC-identified Green non-cited violation (NCV) of Unit 1 and 2 Technical Specification 6.8.1.a for the licensee's failure to follow station procedures to adequately implement freeze protection requirements. Specifically, inspectors found a number of requirements improperly executed with no specific follow-up of those requirements contained within periodic instructions used to verify program implementation. The licensee placed the issue into the CAP and corrected the identified deficiencies.

The inspectors determined that the failure to adequately implement all requirements of the licensee's freeze protection program procedures was a performance deficiency. The inspectors determined that the performance deficiency was more than minor because it was associated with the Mitigating System Cornerstone attribute of Protection against External Factors and adversely affected the cornerstone objective in that specific measures required for freeze

protection were not properly implemented and station procedures did not maintain those expected conditions. The inspectors determined the finding was of very low safety significance (Green) as the site had not experienced significant freeze conditions yet this season. The cause of this finding was related to the cross-cutting aspect of ensuring personnel training is adequate to assure nuclear safety [H.2(b)] (Section 1R01)

Inspection Report# : [2012005](#) (*pdf*)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to implement fire protection impairment requirements

The inspectors identified a Green noncited violation of Units 1 & 2 Technical Specification 6.8.1.f for the licensee's failure to implement procedures required for fire protection program implementation. The inspectors found multiple examples of where fire watches were not conducted in accordance with procedure NPG-SPP-18.4.6, Control of Fire Protection Impairments, Revision 1, when required. The licensee entered this issue into the CAP program as PERs 635934 and 635934.

Failure of the licensee to implement the requirements of procedure NPG-SPP-18.4.6, Control of Fire Protection Impairments, Revision 1, 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 adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to perform compensatory measures (fire watches), could have potentially compromised the ability to safely shutdown the plant in the event of a fire in any of the fire zones where the fire watches were required. The significance of this finding was evaluated in accordance with the IMC 0609 Attachment 4, Phase 1- Initial Screening and Characterization of Findings, which required further evaluation in accordance with Appendix F, Attachment 01, Part 1, Fire Protection SDP Phase 1 Worksheet. The finding was assigned to the fire prevention and administrative controls category and represented a low degradation level. The inspectors concluded that the finding was of very low safety significance (Green) based on a qualitative screening and the low degradation rating. The finding was determined to have a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area [H.4(c)] since the licensee failed to ensure that there was adequate supervisory and management oversight of fire watches. (Section 1R05).

Inspection Report# : [2012005](#) (*pdf*)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to establish adequate procedures for fire protection impairment requirements

The inspectors identified a Green noncited violation of Units 1 & 2 Technical Specification 6.8.1.f for the licensee's failure to establish adequate procedures required for fire protection program implementation. Specifically, NPG-SPP-18.4.6, Control of Fire Protection, Revision 1 Impairments was determined to be inadequate because it did not provide any guidance on what a fire watch was supposed to do when they came to a protected door. The licensee entered this issue into the CAP program as PER 652672.

Failure of the licensee to establish adequate procedures required for fire protection program implementation 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 adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to establish adequate procedures required for fire protection program implementation caused compensatory measures (fire watches) to not be adequately completed and could have potentially compromised the ability to safely shutdown the plant in the event of a fire in any of the fire zones where the fire watches were required. The significance of this finding was evaluated in accordance with the IMC 0609 Attachment 4, Phase 1- Initial Screening and Characterization of Findings, which required further evaluation in accordance with Appendix F, Attachment 01, Part 1, Fire Protection SDP Phase 1 Worksheet. The

finding was assigned to the fire prevention and administrative controls category and represented a low degradation level. The inspectors concluded that the finding was of very low safety significance (Green) based on a qualitative screening and the low degradation rating. The finding was determined to have a cross-cutting aspect in the

Work Practices component of the Human Performance cross-cutting area [H.2(c)] for failure to provide adequate procedures for individuals conducting fire watches. (Section 1R05).

Inspection Report# : [2012005](#) (pdf)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: VIO Violation

Failure to adequately evaluate and qualify molded case circuit breakers

The inspectors identified a violation with several examples of 10 CFR 50, Appendix B, Criterion III, “Design Control,” for failure to implement design control measures that review for suitability of application of materials, parts, and equipment that are essential to the safety-related functions of the structures, systems, and components and that provide for verifying or checking the adequacy of design such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program, including qualification testing of a prototype unit under the most adverse design conditions. The licensee entered this issue into the CAP as PER 668367.

Failure of the licensee to ensure measures used to review the suitability of application of materials, parts, and equipment essential to the safety-related functions of molded case circuit breakers, and measures to provide for the verification of checking the adequacy of design were in place was a performance deficiency. This performance deficiency was more than minor 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 120-VAC vital instrumentation boards had properly maintained their seismic qualification for their application. The inspectors assessed this finding for significance in accordance with NRC Manual Chapter 0609, Appendix A, Exhibit 2, Significance Determination Process (SDP) for Findings At-Power – Mitigating Systems Screening Questions, and determined that it was of very low safety significance (Green) as the devices in question had been intrinsically qualified for this application as part of a complete panel test by the original vendor and the licensee determined that the SSC maintained its operability or functionality despite the identified non-conformances. The inspectors evaluated this finding and violation of NRC requirements in accordance with the NRC Enforcement Policy, Section 2.3.2, and found two conditions to not be met requiring a Notice of Violation be issued. First, inspectors found the licensee failed to restore compliance within a reasonable time after the original violation (05000327.328/2011002-01) was identified. The NRC Enforcement Manual, Section 3.1.2.A.1.b).1), further defines restoring compliance to include those actions taken to stop an ongoing violation from continuing. Second, the inspectors determined that the identified non-conformances represented a repetitive violation as a result of inadequate corrective action and that identification was by the NRC inspector. The lack of rigor in addressing the root of the prior violation which resulted in the inadequate corrective action further led the inspectors to identify a crosscutting aspect in the CAP component of the Problem Identification and Resolution area [P.1(c)]. (Section 4OA2.2)

Inspection Report# : [2012005](#) (pdf)

Significance:  Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Evaluate Fire Drill

The inspectors identified a noncited violation of Units 1 & 2 Technical Specification 6.8.1.f for the licensee’s failure to implement procedures required for fire protection program implementation. Specifically, the licensee failed to evaluate six minimum critical objectives on December 5, 2011, during a fire drill as required by TVA-SPP-17.16, Conduct and Evaluation of Fire Drills, revision 0. This issue was entered into the licensee’s corrective action program as Problem Evaluation Reports (PERs) 538996, 568242, and 568248.

The performance deficiency was determined to be greater than minor because it was associated with the protection against external events 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. Specifically, the lack of adequate drill performance could negatively affect the fire brigade's capability to combat a fire. Findings associated with performance of the fire brigade are not evaluated using IMC 0609, Attachment F, "Fire Protection Significance Determination Process," and Appendix M, "Significance Determination Process Using Qualitative Criteria," as described in NRC Inspection Manual Chapter 0609.04, Table 3b, "Phase 1 - Initial Screening and Characterization of Findings." The NRC concluded that the finding was of very low safety significance (Green) because the defense-in-depth attribute of the fire brigade was minimally affected, in that, the evaluated crew was only one of four crews of the site fire brigade team, the other crews had adequately been evaluated, and that the overall condition of the fire detection and suppression systems has been satisfactory. The finding was determined to have a crosscutting aspect in the area of Problem Identification and Resolution because of inadequate oversight and self-assessment of fire operations department activities, specifically fire brigade training. [P.3(a)] (Section 1R05)

Inspection Report# : [2012003](#) (pdf)

Significance:  Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Turbine Throttle Valve Reactor Trip Function Degraded

The inspectors identified a Green NCV of Unit 1 TS 6.8, "Procedures & Programs," for the licensee's failure to provide adequate procedures for maintenance and surveillance activities involving the main turbine throttle valves and the associated solid state protection system (SSPS) function which provides a reactor trip on turbine trip signal. The failure to include applicable torque requirements for set screws associated with the limit switch lever arm assembly resulted in one of the four turbine throttle valve position limit switches being in an inoperable condition such that the SSPS function of reactor trip on turbine trip, which involves a four-out-of-four logic, was inoperable and could not have functioned if required. This issue was entered into the licensee's corrective action program as Problem Evaluation Reports (PERs) 419594 and 518647

The finding was determined to be greater than minor because it was associated with the procedure quality attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding resulted in the inability of the SSPS to provide the required reactor trip signal upon closure of all four turbine throttle valves above 50 percent RTP. Using Inspection IMC 0609, "Significance Determination Process," Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to be of very low safety significance (Green) since the trip is not credited in any Updated Final Safety Analysis (UFSAR) Chapter 15 accident analysis and the redundant reactor trip on turbine trip function that is based on low auto stop oil pressure was unaffected.

The cause of this finding was determined to have a cross-cutting aspect in the area of Human Performance, Resources component, and the aspect of complete and accurate procedures and work packages. The procedures for performing maintenance and surveillance activities associated with the turbine throttle valves and associated SSPS function were not adequate to assure nuclear safety due to the failure to include applicable torque requirements for the components associated with the valve limit switch assembly. [H.2(c)]. (Section 4OA2.2)

Inspection Report# : [2012003](#) (pdf)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Meet Fire Drill Training Requirements

The inspectors identified a noncited violation of facility operating license

DPR-77 condition 2.C.(16) and facility operating license DPR-79 condition 2.C.(13) for failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, Sequoyah's Fire Protection Report Part II, Section 9.3.b.2 – Fire Drills requires a minimum of one drill per shift every calendar quarter, a minimum on one unannounced drill per shift per year, at least one drill per shift per year is performed on a “backshift” for each fire brigade, and fire brigade members including leaders shall participate in at least two drills per year. The inspectors identified multiple examples of the licensee's failure to meet these requirements in calendar years 2010 and 2011. This issue was entered into the licensee's corrective action program as Problem Evaluation Report (PER) 513378, 512736, and 527875. Inspection Report# : [2012002](#) (*pdf*)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: FIN Finding

Failure to Follow Corrective Action Program Procedures

The inspectors identified a finding for the licensee's failure to meet the requirements of corrective action program procedure NPG-SPP-03.1.7, PER Actions, Revision 2. Specifically, the licensee failed to ensure that the corrective action plan and associated actions addressed the required action and schedule associated with PER 432510, which documented the need to address a condition involving water accumulation in manhole locations containing electrical cable runs. This issue was entered into the licensee's corrective action program as Problem Evaluation Report (PER) 433761, 432510, and 505259.

Inspection Report# : [2012002](#) (*pdf*)

Significance:  Mar 31, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Turbine Driven Auxiliary Feedwater Pump Inoperable Due to Overspeed Trip

A self-revealing NCV of Unit 1 TS 6.8, “Procedures & Programs,” was identified for the licensee's failure to provide adequate procedures for a maintenance activity involving the required inspection of an Essential Raw Cooling Water (ERCW) pipe leak in the Unit 1 Turbine Driven Auxiliary Feedwater Pump (TDAFW) room. This resulted in water intrusion into the governor control cabinet of the TDAFW Pump, which caused the pump to be inoperable due to an electrical overspeed trip caused by fluctuating speed indications. This issue was entered into the licensee's corrective action program as Problem Evaluation Report (PER) 470310.

Inspection Report# : [2012002](#) (*pdf*)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Change to Fire Protection Program Which Adversely Affected Safe Shutdown Without Prior NRC Approval

The inspectors identified a non-cited violation of Sequoyah operating license conditions 2.C. (16) and 2.C. (13) for Units 1 and 2 respectively, for a change made to the Sequoyah fire protection program which was determined to adversely affect safe shutdown (SSD), without prior NRC approval. Specifically, in lieu of protecting the cables and equipment to ensure that one train of equipment required for SSD was free of fire damage, the licensee made a change to the Sequoyah fire protection program in 2002 that added new operator manual actions (OMAs) to achieve SSD, without prior NRC approval. The evaluation performed in 2002 for the new OMAs was not adequate to support the conclusion that adding the OMAs did not adversely

affect post-fire SSD because the evaluation only addressed OMA feasibility and did not address defense-in-depth. The licensee entered this issue in the corrective action program as problem evaluation report 324757 to track resolution.

Inspection Report# : [2012002](#) (*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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