

North Anna 1 4Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Follow Work Instructions for the Replacement of Protective Relays Causes a Unit 1 Reactor Trip Due to Loss of Station Service Bus Transformer After Start of 1C Condensate Pump

A Green, self-revealing finding was identified for failure to follow procedure for the replacement of protective relays that resulted in a Unit 1 trip. Specifically, the instructions in work order (WO) 59102618778 stated to “Have Control Ops install shorting screws for CT circuit,” and “Have Control Ops remove shorting screws for CT circuit.”

Maintenance personnel failed to remove the current transformer terminal block shorting screws installed inside the 1C switchgear breaker 15C2 cubicle and caused the turbine to trip and the reactor to trip from the loss of the 1C station service transformer after the start of the ‘C’ condensate pump. This was entered into the licensee’s CAP as CR528984.

The inspectors determined that the licensee’s failure to follow work instructions in WO59102618778 which stated to “Have Control Ops install shorting screws for CT circuit,” and “Have Control Ops remove shorting screws for CT circuit” for the replacement of protective relays was a performance deficiency. The performance deficiency was more than minor because it was associated with the Initiating Events cornerstone attribute of equipment performance and adversely affected the associated cornerstone objective in that maintenance personnel left the current transformer terminal block shorting screws installed inside the 1C switchgear breaker cubicle which caused the turbine trip and subsequent reactor trip from the loss of the 1C station service transformer after the start of the ‘C’ condensate pump. Using Inspection Manual Chapter 0609, Attachment 4, Initial Characterization of Findings, issued June 19, 2012, the finding was determined to be of very low safety significance (Green) because it was a transient initiator, but did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. In addition, this finding involved the cross cutting area of human performance, the component of resources, and the aspect of complete, accurate, and an up-to-date work instructions, H.2(c), because the work order job steps did not contain adequate means for documenting the installation and removal of shorting screws, which resulted in a loss of configuration control for the 1C switchgear 15C2 breaker cubicle. (Section 4OA2.4)

Inspection Report# : [2013005](#) (*pdf*)

Mitigating Systems

Significance: G Mar 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Ensure Opposite Unit’s Service Water Pumps Were Free of Fire Damage for a Postulated Fire in Either Unit’s ESWGR

An NRC-identified non-cited violation was identified for the licensee’s failure to meet the requirements of North Anna Power Station (NAPS) Renewed Operating License Conditions 2.D, and the approved Fire Protection Program

for Units 1 and 2. Specifically, the licensee failed to ensure that fire damage to cables associated with the opposite unit's service water (SW) pumps, located in each unit's emergency switchgear (ESWGR) room, would not prevent operation of the unaffected unit's SW pumps as described in Section 4.4.3.5 of the NAPS Appendix R Report. Postulated fire scenarios were identified in which the SW pumps for both units could be compromised due to a single fire in either unit's ESWGR room. The licensee had previously entered this issue in the NAPS corrective action program as condition report 500152 to evaluate this SW pump control circuit vulnerability and had implemented hourly roving fire watches in each unit's ESWGR room.

Failure to perform an adequate safe shutdown (SSD) analysis as required by the NAPS FPP is a performance deficiency. This finding was determined to be more than minor because it was associated with the reactor safety mitigating systems cornerstone attribute of protection against external events (i.e. fire), and it affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding had the potential to affect the ability to achieve post-fire SSD in the event of a fire in either unit's ESWGR. The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," dated June 2, 2011, Attachment 4, "Initial Characterization of Findings," dated June 19, 2012, which determined that an IMC 0609 Appendix F, "Fire Protection Significance Determination Process," dated February 28, 2005, review was required as the finding affected fire protection safe shutdown. The inspectors evaluated this finding using the guidance in IMC 0609, Appendix F. The inspectors performed Phase 1 and Phase 2 SDP screening assessments using IMC 0609, Appendix F, Attachments 1 and 2, and were not able to screen out this issue in the SDP Phase 1 or Phase 2. A senior reactor analyst from the Region II office performed a Phase 3 SDP analysis to assess the significance of this finding. The analyst determined that this finding was of very low safety significance (i.e., Green) because the risk was mitigated by the availability of at least one SW pump and the fire growth scenarios were mitigated by the gaseous suppression system. The inspectors determined that there was no cross-cutting aspect associated with this finding because it was not reflective of current licensee performance. (Section 1R05.2)

Inspection Report# : [2013002](#) (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

Last modified : February 24, 2014