North Anna 2
3Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify Locations of Boric Acid Leakage
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings. Licensee activities affecting quality were not accomplished in accordance with site procedures NASES-6.23 and DNAP-1004, in that the licensee failed to identify multiple boric acid leaks. These procedures require plant personnel to identify and document all evidence of boric acid leakage and complete a formal engineering evaluation for boric acid leaks that meet a defined severity threshold. The licensee immediately entered the leaks into their corrective action system, and conducted an initial operability review prior to unit restart.

This finding is greater than minor because it affected the equipment performance attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding is similar to non-minor example 4.a of IMC 0609 Appendix E, in that the licensee routinely failed to follow procedures by not identifying locations of boric acid leakage. This finding was determined to be of very low safety significance based on the IMC 0609, Appendix A, Phase 1 SDP worksheet. The finding screened as Green because leakage of boric acid is characterized as a Loss of Coolant Accident (LOCA) initiator, but the identified leakage did not contribute to the increased likelihood of a primary or secondary LOCA, and the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. The cause of the finding is related to the cross-cutting area of human performance.

Inspection Report# : 2005005*(pdf)*

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform a Risk Assessment Related to Scaffold-Arc Event
The inspectors identified a non-cited violation of 10 CFR 50.65 (a)(4) which requires that the licensee assess and manage the increase in risk that may result from the proposed maintenance activities. During the removal of scaffolding beneath conductors associated with ‘C' Reserve Station Service Transformer a section of scaffolding contacted a lightning arrestor connected to the ‘B' phase conductor. The resultant arc and impending relay actuation increased the risk for a loss of normal power to a 4160V safety-related bus on each unit. The licensee entered this problem into their corrective action program following the inspectors review of the licensee's root cause evaluation which failed to address the risk assessment aspects of this event.

This finding is more than minor because the licensee risk assessment failed to consider maintenance activities that could increase the likelihood of initiating events. The inspectors determined that the finding is of very low safety significance, Green, since the incremental core damage probability deficit was less than 1E-6 and a loss of normal power to a safety-related bus did not occur. This finding impacts the cross-cutting area of human performance.
Inspection Report# : 2005005*(pdf)*

Mitigating Systems

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Tornado Missile Protection for the AFW System
A non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III was identified by the NRC on July 10, 2006, for the failure to adequately protect auxiliary feedwater (AFW) components from tornado generated missiles. The licensee installed a modification to protect some of the identified components and is planning to modify their design basis to address the remaining components.

The failure to assure adequate tornado missile protection had a credible impact on reactor safety because of the exposure of all three trains or subsystems of the AFW system to tornado induced damage. The finding is more than minor due to its impact on the Mitigating System cornerstone and the related attribute of design control. A phase III evaluation concluded that the finding was of very low safety significance given that the facility is located in a part of the country with a low incidence of tornados, i.e., the initiating event frequency for a tornado is low, and systems other than AFW are available to help mitigate the event.
Inspection Report# : 2006004*(pdf)*

Significance: G Jun 30, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Corrective Action Results in Failure of Control Room Chiller to Start
A self-revealing non-cited violation of 10 CFR 50 Appendix B Criterion XVI was identified for inadequate corrective action which resulted in an inoperable control room chiller. On May 16, 2006, the chiller failed to start due to a faulty chilled water flow switch. Previously, a work order was initiated as part of a corrective action document to replace the flow switch due to aging. However, the work order was completed without performing the switch replacement. The licensee documented this failure in their corrective action program.

The finding is more than minor due to the impact on the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and its attribute of procedure quality. The finding is of very low safety significance because it did not result in a loss of safety function of one or more trains and was not potentially risk-significant due to possible external events. The cause of this finding involved the problem identification and resolution cross-cutting area based on the failure of the work order to complete the actions of a corrective action document.
Inspection Report# : 2006003*(pdf)*

Significance: G Jun 30, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Correct a Condition Adverse to Quality Regarding High Cycle Fatigue Failure of the 2J EDG Lube Oil Filter Vent Line
A self-revealing non-cited violation of 10 CFR 50 Appendix B Criterion XVI was identified for the licensee's failure to properly identify and evaluate the extent of condition involving high cycle fatigue of components associated with Emergency Diesel Generators (EDGs). The failure to correct this condition adverse to quality resulted in a broken lube oil filter vent line and subsequent inoperability of the Unit 2 J EDG on October 16, 2005. The licensee repaired this problem through their corrective action program.

This finding is more than minor due to the impact on the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and its attribute of procedure quality. The finding is of very low safety significance because it did not result in a loss of safety function of one or more trains and was not potentially risk-significant due to possible external events. This finding impacts the cross-cutting area of problem identification and resolution, in that, the licensee failed to properly identify and evaluate the extent of condition involving high cycle fatigue of components associated with the EDGs.
Inspection Report# : 2006003*(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to translate TS operable-operability definition regarding hazard barriers into instructions as required by 10 CFR 50 Appendix B Criterion III
An NRC-identified non-cited violation of 10 CFR 50 Appendix B Criterion III was identified for failure to translate design requirements into procedures. Specifically, the licensee failed to properly translate the Technical Specification (TS) "Operable-Operability" definition into procedures which established the time the environmental hazard barriers between the turbine building and either the main control room or the emergency switchgear room were allowed to be inoperable during maintenance. This issue is documented in the licensee's corrective action program as Plant Issues N-2005-1080 and N-2005-2236.

This issue is more than minor because it could become a more significant condition, in that the unit could continue to operate at full power with main control room and emergency switchgear equipment exposed to potentially harsh environmental conditions (e.g. steam from a high energy line break in the turbine building) for a period of time greater than that allowed by TS. However, the time period that the pressure boundary door 2-BLD-STR-S54 was inoperable on March 16, 2005 did not result in a violation of TS 3.0.3 and thus no performance deficiency existed for that specific event. After management review, the issue was assigned a significance of Green because the inoperability period was limited to a maximum of 24 hours by other TS.
Inspection Report# : 2006002*(pdf)*

Significance: G Mar 31, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Design Control Results in Safeguards Instrument Rack Room Flood Problem
A self-revealing non-cited violation of 10 CFR 50, Appendix B, Criterion III was identified for inadequate design control resulting in a flood potential for the Units 1 and 2 safeguards instrument rack rooms. On July 9, 2005, back flush of control room chiller service water strainers 2-HV-S-1A and 1B as directed by engineering transmittal ET N-05-0034, "Operability of 2-HV-P-22C, Service Water Pump for 2-HV-E-4C," was performed in the Unit 2 air conditioning chiller room (ACCR). Following this work activity, the licensee observed water around a floor drain in the adjacent air conditioning fan rooms (ACFR) and initiated Plant Issue N-2005-2565 to evaluate the abnormal condition. Subsequently, the licensee determined that back-flow preventers were not installed in the floor drains on the ACFRs on both units. The back-flow preventers are necessary to prevent leakage in the ACCR from bypassing the flood wall protecting the ACFR and adjoining safeguards instrument rack room from flooding.

The inspectors determined that the finding had a credible impact on safety based on the potential for flooding to impact the instrument rack room which contains both trains of Solid State Protection System cabinets used for engineered safeguards. The finding, if left uncorrected, would result in a more significant safety concern and is consequently more than minor. A Phase III evaluation was performed for the SDP due to the loss or degradation of equipment specifically designed to mitigate a flooding event and the impact on two trains of a safety system. This evaluation concluded that the performance deficiency was of very low safety significance (Green) based on the existence of high level alarms for the associated sumps and the response time allowed for an operator to isolate the leak (approximately 40 minutes). The inspectors also concluded that this finding had aspects relating to the cross-cutting area of problem identification and resolution.
Inspection Report# : 2006002*(pdf)*

Significance: G Feb 10, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Carbon Dioxide System for Unit 2 Cable Vault and Tunnel Area Has Degraded Manual Mode
NRC inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.48, Fire Protection, for a degraded carbon dioxide suppression system in the Unit 2 cable vault and tunnel fire area. The system was degraded in that the manual mode of operation would not achieve the desired gas concentration. The licensee took prompt corrective action for the gas concentration problem by placing temporary instructions at the manual discharge stations. The licensee entered the problem into their corrective action program.

The finding is associated with the reactor safety, mitigating system, cornerstone attribute of protection against external factors, i.e. fire. It is more than minor because the actual system capability or capacity was affected in a substantive way. The safety significance of the shortfall in concentration in the mechanical manual mode of operation screens as very low in the SDP Phase 1 evaluation because only one feature of the system was affected; the automatic mode and pushbutton mode were unaffected by the problem. In addition, the carbon dioxide system was backed up by a manual sprinkler system and a manual deluge system.
Inspection Report# : 2005008*(pdf)*

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Assess the Increase in Risk for Work Associated With Spent Fueling Pool (SFP) Cooling Support Systems During a Defueled Plant Condition
The inspectors identified a non-cited violation of 10 CFR 50.65 (a)(4) which requires that the licensee assess and manage the increase in risk that may result from the proposed maintenance activities. Upon achieving a reactor defueled plant condition, the licensee failed to continue risk assessments during system alignments and maintenance activities associated with power supplies for the spent fuel cooling pumps. The licensee resumed the risk assessments and entered the deficiency into their corrective action program after identification of the finding by the inspectors.

The licensee's failure to perform risk assessments is more than minor because it impacted the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences to the reactor core and the associated cornerstone attribute of human performance. The finding did not increase the likelihood of a loss of offsite power or degrade the licensee's ability to cope with a loss of offsite power due to actual component failures, resulting in the characterization of very low safety significance (Green). The cause of the finding impacts the cross-cutting area of human performance.
Inspection Report# : 2005005*(pdf)*

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct a Condition Adverse to Quality Regarding Small Debris in Containment
The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, which requires in part that measures shall be established to assure that conditions adverse to quality, such as deficiencies, are promptly identified and corrected. During a containment closeout inspection for the refueling outage on Unit 2, an appreciable amount of small debris was found beneath the seismic support plates in all 3 loop rooms and beneath the air recirculation fans. The licensee took immediate action to remove the debris prior to entering Mode 4 and entered the problem into their corrective action program.

The inspectors determined the finding is more than minor because it could be reasonably viewed as a precursor to a significant event involving debris accumulation on the containment sump screens and a subsequent impairment to suction flow for emergency core cooling system pumps. The inspectors further determined the finding was of very low safety significance and impacted the Mitigating Systems Cornerstone. However, the finding did not result in a loss of function per Generic Letter 91-18, did not represent an actual loss of safety function, and was not potentially risk significant due to possible external events. This finding impacts the cross-cutting area of problem identification and resolution.
Inspection Report# : 2005005*(pdf)*

Significance: G Dec 31, 2005
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Establish Adequate Instructions or Procedure for Placing Placards on Safety-Related Equipment
A self-revealing non-cited violation was identified of 10 CFR 50 Appendix B, Criterion V, which requires in part that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures. As a result of the licensee's failure to establish an adequate

procedure to control placards affixed to safety-related equipment, a trip of the 2-III Vital Bus Inverter occurred. The licensee has entered this problem into their corrective action program to determine appropriate corrective actions.

The finding was more than minor due to the impact on the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and its attribute of procedure quality. The inspectors determined that no additional qualitative assessment was warranted based on the continued availability of core cooling, and the finding resulted in the characterization of Green (very low safety significance). The cause of this finding involved the cross-cutting area of human performance.
Inspection Report# : 2005005*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

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