

## North Anna 2 4Q/2006 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:** G Dec 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Identify Unsatisfactory Performance of a Fire Brigade Crew**

The inspectors identified a Green, non-cited violation of the Fire Protection Program because the licensee's assessment of a fire brigade drill was inadequate. Fire brigade performance was not accurately critiqued to identify deficiencies requiring corrective action. The licensee entered this problem into their corrective action program for appropriate action.

This finding is more than minor because it had a high negative impact or degradation on the ability of the fire brigade to effectively carry out its manual fire fighting control and suppression function. This finding was of very low safety significance because the observed crew was only one of four crews of the site fire brigade team, and that the overall condition of the fire detection and suppression systems had been satisfactory. The cause of the finding is related to the cross-cutting area of problem identification and resolution.

Inspection Report# : [2006005](#) (*pdf*)

**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*)

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**Significance:** 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*)

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**Significance:** 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*)

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**Significance:** 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:**  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*)

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## **Barrier Integrity**

**Significance:**  Dec 31, 2006

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Inadequate Corrective Action to Upgrade Breaker Operating Mechanism**

A Green, self-revealing non-cited violation of 10 CFR 50, Appendix B, Criterion XVI was identified as a result of inadequate corrective action to upgrade the operating mechanism for a Unit 2 Quench Spray pump breaker. The licensee initiated corrective actions that involved replacement of the breaker with an upgraded spare breaker and extent of condition review.

The failure to implement corrective action had a credible impact on safety due to the impact on the component's accident response time which exceeded the analyzed value. The finding is more than minor because it affected the mitigating system cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences and the related attribute of equipment performance. The finding was of very low safety

significance (Green) in that it did not result in a loss of operability due to a design or qualification deficiency, did not represent an actual loss of safety function, and was not potentially risk significant due to possible external events. The cause of this finding involved the cross-cutting area of problem identification and resolution.

Inspection Report# : [2006005](#) (*pdf*)

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **Physical Protection**

[Physical Protection](#) information not publicly available.

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## **Miscellaneous**

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