

# North Anna 1

## 4Q/2005 Plant Inspection Findings

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### Initiating Events

**G****Significance:** 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\(pdf\)](#)**G****Significance:** Sep 30, 2005

Identified By: Self-Revealing

Item Type: FIN Finding

**Untimely Corrective Actions for Actuator Oil Leakage on Turbine Interface Valve Results in Rapid Down Power**

A self-revealing finding was identified for untimely corrective action resulting in a rapid reduction of power on Unit 1 due to a severe oil leak on the valve actuator for 1-EH-TV-100, main turbine auto stop oil interface valve. A similar problem on this valve resulted in a manual reactor trip on April 19, 2003. Subsequent evaluations from a Unit 2 similar issue determined that torque values as specified by procedure for the valve actuator diaphragm bolts were below the values as recommended by the vendor, but untimely corrective actions resulted in a rapid Unit 1 down-power on August 5, 2005.

This finding had a credible impact on safety due to the challenge of plant control systems from the rapid reduction of power. The finding is consequently more than minor based on the impact to the Initiating Events cornerstone objective to limit the likelihood of those events that upset plant stability and the cornerstone attribute of equipment reliability. This finding contains aspects relating to the cross-cutting area of problem identification and resolution.

Inspection Report# : [2005004\(pdf\)](#)

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### Mitigating Systems

**G****Significance:** Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Inadequate Design Control Results in Degradation of SW Supports/Restraints**

A self-revealing non-cited violation of 10 CFR 50, Appendix B, Criterion III, was identified for inadequate design controls. During the development of a service water (SW) expansion joint modification, which was implemented in December 2003, the licensee failed to verify the design adequacy of adjacent pipe support and restraints. The design failed to incorporate normal system pressure loads in the design. As a result, on June 14, 2005, during inspections of the SW expansion joints, the licensee noted severe damage on adjacent pipe support and restraints. Both the Unit 1 and Unit 2 'A' and 'B' trains of SW were affected. The SW system was determined to operable but degraded.

This finding had a credible impact on safety based on a design control error which impacted both trains of the SW system which is a link between the transfer of reactor decay heat to the plant's ultimate heat sink. 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 (i.e. core damage) and the cornerstone attribute of design control of plant modifications. The finding is of very low safety significance because the design deficiency was confirmed not to result in loss of function per Generic Letter 91-18. This finding contains

aspects relating to the cross-cutting area of human performance.  
Inspection Report# : [2005004\(pdf\)](#)

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**Significance:** Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Inadequate Maintenance of a Procedure Results in Loss of Safety Related 480V Buses**

A self-revealing non-cited violation of Technical Specification 5.4.1.a was identified for an inadequate procedure which resulted in the loss of two Unit 1 safety-related 480V buses on May 1, 2005.

The finding had a credible impact on safety due to the loss of two safety-related 480V buses resulting in the loss of power to multiple B train components two minutes after a containment depressurization signal during a design basis accident. The finding is more than minor due to the impact on two cornerstones, Mitigating Systems and Barrier Integrity. A Phase II evaluation of the significance determination process concluded the finding was of very low safety significance (Green) because only the B train was affected, a two minute time delay allowed safety-related component reposition, and emergency procedures identified appropriate operation action for manual component operation following the fault. This finding contains aspects relating to the cross-cutting area of human performance.

Inspection Report# : [2005004\(pdf\)](#)

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**Significance:** Jan 28, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Determine the Cause and take Appropriate Corrective Actions for the Installation of Incorrect Thermocouples in the Charging Pump Bearings.**

Between 1993 and 2004, the licensee replaced 5 of the 18 thermocouples associated with the Unit 1 and 2 charging pump inboard, outboard, and thrust bearings. The replacement thermocouples were of the incorrect type. The finding was a failure of the licensee to take corrective actions following the identification of the incorrect thermocouples being used on the charging pump bearings in 2002. The finding was more than minor as the condition could have adversely impacted the ability of control room operators to detect charging pump bearing degradation or an impending failure during normal or emergency operations.

The event was determined to be of very low safety significance (Green) because the alternate train charging pumps which had the original "T" type thermocouples were available to perform their safety function for the period between 1993 and 2004. This finding is a non-cited violation of 10 CFR 50 Appendix B Criterion XVI, "Corrective Actions." This finding involved the cross-cutting aspect of Problem Identification and Resolution.

Inspection Report# : [2005006\(pdf\)](#)

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## **Barrier Integrity**

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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

**Significance:** N/A Jan 28, 2005

Identified By: NRC

Item Type: FIN Finding

**BIENNIAL NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT NOS. 50-338/2005-006 AND 50-339/2005-006**

The team concluded that, in general, problems were properly identified, evaluated, and corrected. The licensee was effective at identifying problems and entering them in the corrective action process. Issues were prioritized and evaluated appropriately, and in a timely fashion. The evaluations of significant problems were in general of sufficient depth to determine the likely root or apparent causes, as well as, address the potential extent of the circumstances contributing to the problem and provide a clear basis to establish corrective actions. Corrective actions that addressed the causes of problems were generally identified and implemented. Reviews of sampled operating experience information were comprehensive. Licensee audits and assessments were found to be adequately broad based and effective in providing management a tool for identifying adverse trends. Previous noncompliance issues documented as non-cited violations were properly tracked and resolved via the corrective action program. Based on discussions with plant personnel and the low threshold for items entered in the corrective action program database, the inspectors concluded that workers at the site were free to raise safety concerns to their management.

Inspection Report# : [2005006\(pdf\)](#)

Last modified : March 03, 2006