

## North Anna 2

# 1Q/2005 Plant Inspection Findings

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### Initiating Events

**G****Significance:** Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Fire Response Procedures Not Adequate to Maintain Reactor Coolant Level Within the Level Indication of the Pressurizer (Section 4OA5)**

In May 2003, the licensee failed to have procedures in effect which would maintain the reactor coolant level in the level indication of the pressurizer during some fires in the Unit 1 and Unit 2 emergency switchgear and relay rooms (ESGRs). A fire in these areas could result in loss of cooling to the reactor coolant pump (RCP) seals and subsequent seal failure loss of coolant accident. The licensee has established interim measures to address this finding while long term corrective actions are evaluated.

An inspector-identified non-cited violation of 10 CFR 50, Appendix R, Sections III.L.2 and .3 was identified. The finding is more than minor, in that, it affected the objective of the Mitigating Systems Cornerstone to ensure the availability, reliability and capability of systems that respond to initiating events. For a severe fire in the ESGRs, established fire protection procedures would not preclude a RCP seal failure and subsequent loss of the capability to maintain the reactor coolant system level within the pressurizer level indication. A Significance Determination Process Phase 3 analysis determined that the finding was of very low safety significance mainly due to recovery actions in procedures and the low likelihood of fire damage to control and power cables due to their routing. (Section 4OA5)

Inspection Report# : [2004006\(pdf\)](#)**G****Significance:** Jun 26, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Reactor Trip due to Improper Cell Switch Installation**

The licensee failed to properly install cell switches for bypass reactor trip breakers in accordance with plant drawings causing a reactor trip during the performance of reactor protection logic testing.

A self-revealing non-cited violation of Technical Specification 5.4.1.a was identified. The finding is greater than minor since it was associated with the design control attribute of the initiating events cornerstone, and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The incorrect cell switch configuration would not have prevented a reactor trip if required by the Reactor Protection System. The finding was determined to have very low safety significance because it only affects the initiating events cornerstone and does not contribute to the likelihood that mitigation equipment or functions will not be available. The issue involved human performance cross-cutting aspects associated with a lack of attention to detail by licensee personnel.

Inspection Report# : [2004003\(pdf\)](#)

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### Mitigating Systems

**G****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\(pdf\)](#)

**G**

**Significance:** Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Adequately Address Vulnerabilities in the Containment Checklist Procedures Resulting in Foreign Material Being Left in Unit 1 Containment (Section 40A2.2)**

The licensee failed to take appropriate corrective actions to preclude the recurrence of a significant condition adverse to quality. Corrective actions taken after the spring outage in 2004 for Unit 2 for inadequate closeout of containment failed to correct the procedure used to ensure all foreign material was removed from containment prior to entry into Mode 4. On October 4, 2004, after the licensee had completed the revised procedure, the inspectors found a large quantity of debris inside the Unit 1 containment.

An inspector-identified non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified. This finding is more than minor because it could be reasonably viewed as a precursor to a significant event. The transport of loose materials to the containment sumps would have caused a restricted flow or blockage and impeded the ability of the containment sumps to provide adequate net positive suction head to the recirculation spray pumps. The finding was determined to have very low safety significance because the amount of material found would not have prevented the containment sumps from performing their intended safety functions, i.e., an actual loss of safety function was not identified. (Section 40A2.2)

Inspection Report# : [2004006\(pdf\)](#)

**G**

**Significance:** Jun 26, 2004

Identified By: NRC

Item Type: FIN Finding

**Incomplete Closeout Inspections of Unit 2 Containment**

One finding was identified involving an inadequate Unit 2 containment closeout inspection to ensure all loose debris was removed and that recirculation sumps were operable prior to Mode 4 entry.

No violation of regulatory requirements was identified. The finding is greater than minor due the potential to have a degraded or inoperable containment sump recirculation system. The finding was determined to be of very low safety significance because an actual loss of safety function was not identified.

Inspection Report# : [2004003\(pdf\)](#)

**G**

**Significance:** Jun 26, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Properly Torque Studs for TDAFW Pump Discharge Restricting Orifice**

The licensee failed to properly torque studs associated with the Unit 2 Turbine Driven Auxiliary Feedwater pump discharge restricting orifice.

An inspector identified non-cited violation of Technical Specification 5.4.1.a was identified. The finding is greater than minor because if left uncorrected, it could result in a more significant safety concern. Under torqued studs could lead to the development of a gasket leak at the non-isolable restricting orifice and challenge the ability of the pump to meet its design basis flow requirements. The finding was determined to be of very low safety significance because pump operability was not challenged and two motor driven trains of Auxiliary Feedwater were available to supply water to the steam generators.

Inspection Report# : [2004003\(pdf\)](#)

**G**

**Significance:** Jun 26, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Assess and Manage the Increase in Risk of Opening a Jet Impingement/Missile Protection Steel Door During Planned Component Maintenance.**

The licensee failed to assess and manage the increase in risk for planned component maintenance activities involving opening of the chiller room rolling jet impingement/missile protection steel door inside the turbine building to support change-out of the control room supply air bottles for trains III and IV.

An inspector-identified non-cited violation of 10 CFR 50.65(a)(4) was identified. The finding is more than minor because the failure to properly manage the increase in risk affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. The finding was determined to be of very low safety significance because there was no loss of mitigating system function in that the common control room air supply from trains I and II were available to mitigate a loss of main

control room ventilation.

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Inspection Report# : [2004003\(pdf\)](#)

**Significance:** **G** Jun 26, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Properly Inspect the EDG Tornado Exhaust Missile Barriers**

The licensee failed to adequately implement the preventative maintenance program to properly inspect the Emergency Diesel Generator concrete tornado missile barriers.

An inspector-identified non-cited violation of Technical Specification 5.4.1.a was identified. The finding is more than minor because if the condition was left uncorrected it would become a more significant safety concern. Continued degradation of the concrete would lead to spalling and concrete debris in the exhaust piping. Accumulation of debris would restrict exhaust flow and derate the engine Kilowatt output. The finding was determined to be of very low safety significance because the tornado concrete structure remained intact and capable to perform the design basis function to protect the exhaust piping.

Inspection Report# : [2004003\(pdf\)](#)

**Significance:** **G** Jun 26, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Alternate Shutdown Panel Ventilation System Not Independent From Impacts of a Main Control Room Fire**

The licensee failed to provide adequate separation, isolation, or barriers for the shared ventilation system between the main control room (MCR) and the Units 1 and 2 emergency switchgear rooms (ESGRs).

A non-cited violation for failure to comply with 10 CFR 50, Appendix R, Sections III.G and III.L was identified by the inspectors. In some fire scenarios involving a severe fire in the MCR, smoke and toxic gases could be transported to the ESGRs where the alternate shutdown panels (ASPs) are located. The licensee entered this finding into their corrective action program as Plant Issue N-2003-1585. This finding is greater than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Because the alternative shutdown capability is not physically independent of the affected fire area, it could present a habitability concern for the operators attempting to achieve shutdown at the respective unit's ASP. This finding is of very low safety significance because both the likelihood of starting a MCR fire and likelihood of generating sufficient smoke to spread to the ESGRs are very low. Additionally, timely fire brigade response activities would provide a pathway to ventilate the smoke away from the MCR.

Inspection Report# : [2004003\(pdf\)](#)

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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.

## 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 : June 17, 2005