

## Byron 2

### 3Q/2003 Plant Inspection Findings

---

#### Initiating Events

**Significance:**  Oct 02, 2002

Identified By: Self Disclosing

Item Type: FIN Finding

#### **FAILURE OF THE GOVERNOR SIDE TURBINE COUPLING WINDAGE SHIELD COVER ON THE UNIT 2 A LOW PRESSURE TURBINE COUPLING NUMBER FOUR**

A finding of very low significance was identified through a self-revealing event. Inadequate installation instructions led to an improperly installed turbine coupling windage shield cover on the Unit 2A low pressure turbine. This resulted in a windage shield cover failing and coming off of the coupling causing vibrations over the trip value. This resulted in a manual turbine trip and reactor shutdown. This finding was more than minor because it increased the likelihood of a reactor trip event due to a turbine trip. This finding was of very low safety significance because the finding did not contribute to a loss of coolant accident, did not affect mitigating equipment functions and did not increase the likelihood of a fire or external event. No violations of NRC requirements occurred.

Inspection Report# : [2002007\(pdf\)](#)

---

#### Mitigating Systems

**Significance:**  Sep 30, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

#### **FAILURE TO FOLLOW PROCEDURE WHEN MAKING-UP ELECTROLYTE LEVEL.**

A finding of very low safety significance and an associated NCV were identified through a self-revealing event. The licensee failed to follow procedure for nickel cadmium battery bank surveillances when the licensee added boric acid as a makeup electrolyte solution vice demineralized water, as specified in the procedure, into the nickel cadmium battery bank cells that supply power to start the diesel engine of the train B essential service water makeup pump assembly. This primary cause of this finding affects cross-cutting area of Human Performance. The licensee replaced the battery assemblies to correct the problem; however, this resulted in additional system unavailability time.

This finding was more than minor because it involved the equipment availability attribute of the Mitigating System cornerstone objective regarding the availability of a system that responds to initiating events to prevent undesirable consequences. The finding was of very low safety significance because there was no design deficiency, no actual loss of safety function, no single train loss of safety function for greater than the technical specification allowed outage time and no risk due to external events. The issue was a Non-Cited Violation of Technical Specification paragraph 5.4.1(a) which required adherence to written procedures for performing maintenance that can affect the performance of safety-related equipment.

Inspection Report# : [2003006\(pdf\)](#)

**Significance:**  Sep 30, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**FAILURE TO SPECIFY A CRITICAL DESIGN DIMENSION IN PROCUREMENT DOCUMENTATION.**

A finding of very low safety significance and an associated Non-Cited Violation (NCV) were identified through a self-revealing event. The licensee failed to adequately specify, in procurement documentation, the proper length for a replacement resistance temperature detector (RTD) installed into the diesel engine oil pan of the train B essential service water makeup pump assembly. This was discovered when an engineer observed excessive vibration of the RTD during the diesel pump operation. The vibration was excessive enough such that continued operability of the pump to perform its intended safety function could not be assured without removing the RTD. The primary cause of this finding was related to the cross-cutting area of Human Performance. The licensee removed the RTD to correct the problem; however, this resulted in additional system unavailability time.

This finding was more than minor because it involved the equipment availability attribute of the Mitigating System cornerstone objective regarding the availability of a system that responds to initiating events to prevent undesirable consequences. The finding was of very low safety significance because there was no design deficiency, no actual loss of safety function, no single train loss of safety function for greater than the technical specification allowed outage time and no risk due to external events. The issue was a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion IV, "Procurement Document Control."

Inspection Report# : [2003006\(pdf\)](#)

**Significance:**  Jun 30, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**FAILURE TO SPECIFY AN ADEQUATE EMERGENCY DIESEL GENERATOR HYDRAULIC OIL SAMPLING PROCESS WHICH LED TO INCREASED UNAVAILABILITY OF THE DIESEL.**

A finding of very low safety significance was identified through a self-revealing event when the licensee failed to adequately specify, in procurement documentation, the testing methods for determining total water concentration in oil samples taken from the 2B emergency diesel generator mechanical governor. The subsequent sample results incorrectly indicated a higher than actual water concentration in the governor oil, and led the licensee to take actions that resulted unnecessary unavailability time of the emergency diesel generator. The failure to adequately specify the appropriate test methodology was related to the cross-cutting area of human performance. Following identification of this issue the licensee changed the sample requirements so that the appropriate test method is now specified for diesel generator governor oil samples.

This finding was more than minor because it impacted the mitigating system cornerstone objective causing the availability of a system that responds to initiating events to prevent undesirable consequence. This finding was of very low safety significance because there was no design deficiency, no actual loss of safety function, no single train loss of safety function for greater than the Technical Specification allowed outage time, and no risk due to external events. This issue was a Non-Cited Violation of 10 CFR 50 Appendix B, Criterion IV, "Procurement Document Control."

Inspection Report# : [2003003\(pdf\)](#)

**Significance:**  May 23, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO MAINTAIN AUXILIARY FEEDWATER INSTRUMENTATION PIPING WATER SOLID**

A finding of very low safety significance was identified involving a Non-Cited Violation of 10 CFR Part 50, Appendix

B, Criterion III, "Design Control," that related to the design basis requirement to maintain auxiliary feedwater instrumentation piping water solid, not being correctly translated into specifications, drawings, procedures, or instructions. This resulted in a void developing in the piping to the suction pressure transmitters 1(2)PT-AF055, which perform a safety-related function to sense low suction pressure and initiate a swap over to the essential service water system on loss of the condensate storage tank.

The finding was more than minor because a lack of coordination between design requirements and procedural guidance affected the mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because it did not represent an actual loss of a safety function as the automatic switchover would still have occurred prior to the pumps losing suction pressure.

Inspection Report# : [2003004\(pdf\)](#)

**Significance:**  May 23, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

### **DESIGN BASIS CALCULATIONS CONTAINED ERRORS OR DID NOT EXIST**

A finding of very low safety significance was identified associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," that related to the coordination, content, and control of design basis engineering calculations. Specifically, the inspectors identified a number of concerns related to the coordination, content, and control of existing calculations (including the failure to coordinate calculation inputs and assumptions as existing design basis calculations are revised or as additional calculations are originated), the use of incorrect or unsupported inputs or assumptions in design basis calculations, the absence of calculations to support some aspects of the current design basis, the failure to appropriately supercede certain calculations or to denote other calculations as historical documents, and, in certain instances, errors in existing calculations. As a result of these issues, the current design basis calculations, as well as the existing calculation control processes, may not be adequate to ensure that the design basis will continue to be maintained. Although none of the specific deficiencies identified during the inspection resulted in immediate operability concerns, it was concluded that the auxiliary feedwater system design basis was not being adequately controlled by the existing calculations nor by the licensee's processes for coordination and control of the calculations.

This finding was more than minor based on the potential that the lack of adequate control and quality of design basis calculations could result in the ability of the auxiliary feedwater system to perform its safety functions to be degraded. Design basis calculations were routinely used in support of design changes, operating procedures, test acceptance criteria, and operability determinations. This finding is assessed as Green because it did not represent an actual loss of the auxiliary feedwater system's safety function.

Inspection Report# : [2003004\(pdf\)](#)

**Significance:**  May 23, 2003

Identified By: NRC

Item Type: FIN Finding

### **COMMITMENT TO HAVE PLACARDS ON THE MAIN CONTROL BOARD CONCERNING MINIMUM FLOW FOR THE AUXILIARY FEEDWATER PUMPS NOT MAINTAINED**

A finding of very low safety significance was identified involving not maintaining a commitment to the NRC to have placards on the main control board. The placards provided guidance to operators to ensure the auxiliary feedwater pumps had sufficient recirculation flow prior to reducing flow to the steam generators below 100 gpm [gallons per minute], such that the pumps remained protected from being run at shutoff conditions that would have resulted in pump damage.

This finding was more than minor because this lack of guidance could have affected the mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because it did not represent an actual loss of a safety function.

Inspection Report# : [2003004\(pdf\)](#)

G

**Significance:** Mar 02, 2003

Identified By: Self Disclosing

Item Type: FIN Finding

**FAILURE TO APPLY GASKET SEALANT DURING THE REASSEMBLY OF THE 2A CV PUMP.**

A finding of very low safety significance was identified through a self-revealing event when technicians failed to apply gasket sealant to the inboard and outboard bearing lube oil housings gaskets during the reassembly of the Unit 2 train A charging pump. This led to excessive oil leakage and required the pump to be removed from service for repair. The primary cause of this finding was related to the cross-cutting area of human performance, since proper gasket installation is a skill of the craft activity. This finding is more than minor because the Unit 2 train A charging pump was returned to service with an existing deficiency similar to the greater than minor examples of Section 5 of Appendix E of Inspection Manual Chapter 0612. This finding is of very low safety significance because there was no design deficiency, no actual loss of safety function, no single train loss of safety function for greater than the technical specification allowed outage time, and no risk due to external events. No violations of NRC requirements occurred.

Inspection Report# : [2003002\(pdf\)](#)

G

**Significance:** Nov 07, 2002

Identified By: Self Disclosing

Item Type: FIN Finding

**FAILURE TO ADEQUATELY EVALUATE THE OPERABILITY OF THE 2B SX PUMP DUE TO THE 30 DROP/MINUTE OIL LEAK.**

The inspectors identified a finding of very low safety significance regarding the licensee's failure to adequately evaluate the operability of the 2B essential service water pump following the identification of a 30 drop per minute lube oil leak. The primary cause of this finding was related to the cross-cutting area of human performance. Despite the fact that the 2B essential service water pump was degraded due to a 30 drop per minute lube oil leak, the licensee declared the pump operable without sufficient justification. This finding was more than minor because it involved an inadequate operability evaluation of the essential service water, which was associated with a human performance attribute of the Mitigating Systems cornerstone. This finding is of very low safety significance because it did not represent an actual loss of function of the essential service water system nor did it involve a potential risk significance due to external events. No violations of NRC requirements occurred.

Inspection Report# : [2002007\(pdf\)](#)

---

## Barrier Integrity

G

**Significance:** Jun 30, 2003

Identified By: Self Disclosing

Item Type: FIN Finding

**FAILURE OF SUPERVISORS AND WORKERS TO UPHOLD THE FOREIGN MATERIAL EXCLUSION**

**STANDARDS RESULTED IN A STEAM GENERATOR TUBE LEAK.**

A finding of very low safety significance was identified through a self-revealing event when supervisors and workers did not uphold the foreign material exclusion standards during previous maintenance activities which resulted in a steam generator tube leak. The finding was not considered a violation of regulatory requirements. The failure to adequately control foreign material was related to the cross-cutting area of human performance.

This finding was more than minor because it involved the human performance attribute that affected the reactor coolant system portion of the barrier integrity cornerstone objective. This finding was of very low safety significance because (1) the plant did not operate at-power with one or more tubes that should have been but were not repaired or plugged based on previous tube inspection results; (2) the tubes in question were found to meet required performance criterion for pressure, as demonstrated by the in-situ testing; and (3) the leakage rate of the tubes was below the 150 gallons per day Technical Specification criteria and below the calculated "accident leakage" rate. No violations of NRC requirements occurred.

Inspection Report# : [2003003\(pdf\)](#)



**Significance:** Mar 19, 2003

Identified By: NRC

Item Type: FIN Finding

**FAILURE TO ADEQUATELY EVALUATE THE OPERABILITY OF THE NONACCESSIBLE AREA EXHAUST FILTER PLENUM VENTILATION SYSTEM DURING A WORK ACTIVITY.**

The inspectors identified a finding of very low safety significance regarding the licensee's failure to appropriately assess the operability of the nonaccessible area exhaust filter plenum ventilation system during a work activity to repair the discharge flow control damper for the 0A auxiliary building heating, ventilation and air conditioning system (VA) nonaccessible filter plenum exhaust fan. The primary cause of this finding was related to the cross-cutting area of human performance. The licensee failed to recognize that failing open an inlet damper within the system resulted in the associated train being inoperable. This finding was more than minor because it involved an inadequate operability evaluation of the nonaccessible area exhaust filter plenum ventilation system, which if left uncorrected, would have become a more significant safety concern, in that, it would impact the operators' ability to combat an accident and minimize offsite exposure for certain accidents. This finding is of very low safety significance because it only represented a degradation of the radiological barrier function provided for the auxiliary building. No violations of NRC requirements occurred.

Inspection Report# : [2003002\(pdf\)](#)

---

## Emergency Preparedness

---

## Occupational Radiation Safety



**Significance:** Jul 14, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**FAILURE TO COMPLY WITH RADIOLOGICAL POSTING RESULTING IN UNAUTHORIZED ENTRY INTO THE RADIOLOGICALLY CONTROLLED AREA**

A finding of very low safety significance and an associated Non-Cited Violation (NCV) were identified through a self-

revealing event, when a station laborer failed to comply with a radiological posting controlling access into the Radiologically Controlled Area (RCA) of the station while delivering a food order intended for the Technical Support Center. The laborer's failure to read and comply with the radiological posting resulted in his unauthorized entry into the RCA without the appropriate additional radiological controls (Radiation Worker Training, Radiation Work Permit, and primary and secondary dosimetry).

The issue was associated with the "Human Performance" attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective in ensuring adequate protection of worker health and safety from exposure to radiation from radioactive material. The cornerstone objective was affected because the RCA boundary posting violated by the laborer represents the final radiation exposure barrier in the field for those workers who are not normally authorized to enter the RCA. Although the laborer entered the RCA without the appropriate radiological controls, the radiological conditions the laborer could have encountered were not sufficient to produce a substantial potential for an exposure in excess of regulatory limits. Therefore, the finding was of very low safety significance. One Non-Cited Violation for the failure to meet the requirements of the licensee's procedure controlling access to the RCA was identified.

Inspection Report# : [2003006\(pdf\)](#)

---

## Public Radiation Safety

---

## Physical Protection

---

## Miscellaneous

Last modified : December 01, 2003