# Byron 2
# 4Q/2004 Plant Inspection Findings

## Initiating Events

## Mitigating Systems

**Significance:** G Sep 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
**FAILURE TO FOLLOW CLEARANCE ORDER PROCEDURES RESULTS IN DAMAGE TO DEEP WELL PUMP DUE TO OPERATIONS WITHOUT ADEQUATE DISCHARGE PATH.**
A finding of very low safety significance and an associated NCV of TS 5.4.1 regarding procedure adherence was self-revealed on July 2, 2004 when, as a result of an equipment control error, the licensee ran the Unit 0 train A (0A) deep well pump with an inadequate flow path such that it was no longer capable of performing its safety function. The licensee had since repaired the pump and placed it back into service. The primary cause of this violation was related to the cross-cutting area of Human Performance. Although procedure requirements stated that effects on components outside the clearance order boundary must be identified as acceptable or properly dispositioned, the effects of work on the 0A deep well pump discharge valve to the SX cooling tower basin were not understood. This was evidenced by the fact that the pump continued to run when the operators expected it to automatically shut off.

The finding was more than minor because the failure to follow the procedure for clearance and tagging was similar to the greater than minor examples of Section 4 of Appendix E of IMC 0612. The finding was of very low safety significance because there was no design deficiency, no actual loss off safety function, and no single train loss of safety function for greater than the TS allowed outage time. Also, there was no risk due to external events because the loss of this equipment by itself would not degrade two or more trains of a multi-train safety system function.
Inspection Report# : 2004007*(pdf)*

**Significance:** G Sep 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
**FAILURE TO PROPERLY SPECIFY THE CORRECT SCHEDULE NUMBER FOR THE SX PUMP GLAND COOLING WATER PIPING IN THE ASSOCIATED DRAWINGS.**
A finding of very low safety significance and an associated Non-Cited Violation (NCV) of 10 CFR 50 Appendix B Criterion III, "Design Control," was self-revealed on September15, 2004 when a known leak on a gland seal cooling line on the Unit 2 train A (2A) essential service water (SX) pump worsened resulting in the licensee declaring the pump inoperable. The leakage from cracked pipe threads in gland seal cooling lines resulted from a combination of the use of thinner wall thickness pipe and hand-cut pipe threads. The thinner pipe was used because the incorrect thickness was specified in the associated drawings. The licensee replaced the existing pipe with the correct wall thickness pipe, and initiated a corrective action to revise the associated drawings. The primary cause of this violation was related to the cross-cutting area of Problem Identification and Resolution because, although the licensee had prior opportunities to identify and correct the drawing, it was not corrected.

This finding was more than minor because the failure to correctly translate the correct schedule number for the SX pump gland water line into Piping and Instrumentation Diagram Drawing was similar to the greater than minor examples of Section 3 of Appendix E of IMC 0612. The finding was of very low safety significance because even though there was a design deficiency, there was no actual loss of safety function, no single train loss of safety function for greater than the Technical Specification (TS) allowed outage time, and no risk due to external events.
Inspection Report# : 2004007*(pdf)*

**Significance:** G Sep 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
**FAILURE TO MANAGE THE INCREASE IN RISK DUE TO 2A EDG MAINTENANCE.**
A finding of very low safety significance and an associated NCV of 10 CFR 50.65 was self-revealed when it was determined that Unit 2 was in a higher risk condition than was communicated by the licensee. Specifically, on July 23, 2004, Unit 2 risk was incorrectly changed from slightly elevated risk back to normal risk while the Unit 2 train A emergency diesel generator was in a configuration where it would not automatically start if called upon in an accident. Upon discovery of the error, the licensee reassigned online risk to the proper designation. The primary cause of this violation was related to the cross-cutting area of Human Performance because after the performance of a concurrent

surveillance test, operators mistakenly assigned online risk to a condition of normal even though the emergency diesel generator remained unable to automatically start.

This finding was more than minor because, if left uncorrected it could have been a more significant safety concern, in that, other maintenance activities that would have raised online risk to a level higher than expected could have been started. 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 TS allowed outage time, and no risk due to external events.
Inspection Report# : 2004007*(pdf)*

**Significance:** G Sep 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
**FAILURE TO TAKE PROMPT CORRECTIVE ACTIONS TO CORRECT ENGINE DAMAGE RESULTING FROM ENGINE OVERHEATING OF THE 2B AFW PUMP DIESEL.**
A finding of very low safety significance and an associated NCV of 10 CFR 50 Appendix B Criterion XVI, "Corrective Actions" was self-revealed when the licensee failed to correct a condition adverse to quality. Specifically, the licensee failed to take prompt corrective actions to correct engine damage resulting from overheating the diesel engine of the Unit 2 train B (2B) AFW pump in April 2004. On August 1, 2004, the discovery of jacket water leakage into the pump bed plate indicated that adequate corrective actions were not taken to correct the consequences of the overheated condition in April 2004. The licensee has since replaced the affected parts in the pump's diesel engine. This deficiency affected the cross-cutting area of Problem Identification and Resolution because, although the licensee had an opportunity to identify and correct the engine damage in April 2004, the extent of the damage was not identified or corrected at that time.

The issue was more than minor because it affected the equipment performance attribute of the mitigating systems cornerstone objective. 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.
Inspection Report# : 2004007*(pdf)*

**Significance:** G Sep 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
**LACK OF COUPLING SPECIFICATIONS PROVIDED IN WORK INSTRUCTIONS RESULTS IN INADEQUATE ACTUATOR TO VALVE ENGAGEMENT.**
A finding of very low safety significance and an associated NCV of TS 5.4.1 regarding procedure quality was self-revealed when the licensee found less than minimum required valve-to-actuator coupling on three safety-related valves. Specifically, the licensee failed to document the correct minimum shaft coupling engagement length for maintenance on Unit 2 containment chiller SX inlet/outlet valves; 2SX112B, 2SX114A, 2SX114B in early 2003. Following the identification of the problem, the licensee adjusted the coupling to ensure proper engagement. The primary cause of this violation was related to the cross-cutting area of Human Performance because the licensee did not provide the specifications for proper shaft coupling engagement length in the work instructions work maintenance on the valves.

This finding was more than minor because it involved the procedure quality attribute associated with the mitigating system cornerstone objective. 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 TS allowed outage time, and no risk due to external events.
Inspection Report# : 2004007*(pdf)*

**Significance:** G Sep 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
**FAILURE TO ASSESS THE ADEQUACY OF A BRACING STRUCTURE INSTALLED TO PROTECT SAFETY RELATED CONDUIT IN THE EVENT OF THE TIP-OVER OF A NONSEISMICALLY MOUNTED TANK DURING AN EARTHQUAKE.**
A finding of very low safety significance was identified by the inspectors for a NCV of 10 CFR 50 Appendix B, Criterion III, "Design Control." Specifically, the licensee failed to assess the adequacy of a bracing structure installed to protect safety-related conduits in the event of the tip-over of a nonseismically mounted tank during an earthquake. Subsequently the licensee evaluated the design in accordance with their temporary modification program. The primary cause of this violation was related to the cross-cutting area of Human Performance because prior to the installation, the engineers failed to assess the adequacy of the design of the bracing structure.

This finding was more than minor because it involved the design control attribute associated with the mitigating system cornerstone objective. The finding was of very low safety significance because although there was a design deficiency, it did not result in a loss of funtion.
Inspection Report# : 2004007*(pdf)*

**Significance:** G Jul 09, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
**Failure to Install Fire Detector in Accordance With NFPA 72E**
The inspectors identified the lack of a smoke detector on the ceiling of the Auxiliary Building 426' general area, Fire Zone 11.6-0, in the beam pocket north of beam 7AB253, located outside of the Radwaste Evaporator Rooms. The failure to have adequate detector placement in this area is a Non-Cited Violation of the Byron operating license, which required detectors to be installed in accordance with National Fire Protection Association (NFPA) standard 72-E. The licensee initiated a corrective action to install adequate detection in the area. The finding was greater than minor because it affected the mitigating systems cornerstone attribute of protection against external factors (fire). As a result of the inadequate detector placement, detection of a fire north of beam 7AB253 could be delayed. The finding was of very low safety significance because of the low fire ignition frequency in this location.
Inspection Report# : 2004005*(pdf)*

**Significance:** G Jul 09, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
**Faulted Pressurizer PORV Power Source Restoration Directions Inadequate**
A finding of very low safety significance was identified by the inspectors for failure to have adequate procedures to achieve cold shutdown conditions within 72 hours following a fire. The inspectors found that the procedures for shutdown from outside of the control room did not provide sufficient direction to restore a faulted pressurizer power operated relief valve (PORV) power source. Once identified, the licensee initiated corrective actions to evaluate and take appropriate corrective actions to restore a faulted pressurizer PORV power source. This finding was more than minor because a deficiency in the procedures for transition to cold shutdown from outside of the control room could have delayed cold shutdown. A delay in achieving cold shutdown following a fire that required shutdown from outside of the control room could have an adverse impact on safety. The finding was of very low safety significance because the finding only involved the ability to achieve cold shutdown and did not affect the ability to achieve and maintain hot standby. This issue was a violation of the licensee's operating licenses as identified in 10 CFR Part 50, Appendix R, Section III.L.3, because the procedures for shutdown from outside of thecontrol room did not provide sufficient direction to restore a faulted pressurizer PORV power source.
Inspection Report# : 2004005*(pdf)*

**Significance:** G Jul 09, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
**Design Control of Fire Loading Calculations**
The inspectors identified that permanent fire loading added during a modification to install a work station for Radiation Protection personnel at Byron Station Unit 2 Auxiliary Building EL. 401', was not added to the total fire loading for the fire zone. The design change process considered fire loading less than 1000 BTUs/sq. ft. to be negligible, creating the potential to lose track of the cumulative fire loading for a given fire zone. The failure to revise the fire loading calculation to account for additional permanent fire loading in a fire zone is a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The licensee's Quality Assurance Manual states that Quality Assurance design control requirements are applicable to fire protection. The licensee initiated a corrective action to ensure that the design control processes would account for all increases in permanent fire loading. The finding was greater than minor because if left uncorrected, it would become a more significant safety concern as it could affect the ability of systems designed to cope with a fire in a given fire zone, if the cumulative fire loading exceeded allowable values. The finding was of very low safety significance because the heat load added by this modification did not exceed the allowance for the area.
Inspection Report# : 2004005*(pdf)*

**Significance:** G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
**FAILURE TO IDENTIFY SEVERAL SITUATIONS OF SCAFFOLDS NOT MEETING THE SEISMIC CLEARANCE SPECIFICATIONS.**
The inspectors identified a Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI, Corrective Actions, having very low safety significance for failing to identify several instances of improperly installed scaffolding, which was considered a condition adverse to quality. These improperly installed scaffolds were identified by the inspectors during plant tours on March 16, March 19, March 28, April 6, and April 7 of 2004. In each case, after being brought to their attention, the licensee took actions to correct the improperly installed scaffolding. The cross-cutting area of Human Performance was affected because the licensee personnel failed to install scaffolding in accordance with the licensee's procedure. The cross-cutting area of Problem Identification and Resolution was affected because the deficiencies were not identified during the scaffolding inspections nor were these deficiencies identified by other members of the licensee's staff. Moreover, even after the inspectors' initial identification of improperly installed scaffolding, the licensee's extent of condition review was inadequate as evidenced by the additional deficiencies later identified by the inspectors.

The issue was more than minor because the licensee failed to perform engineering evaluations on scaffold that potentially impacted safety-related systems. The issue was similar to more than minor example 4.a of Appendix E of IMC 0612. The inspectors determined that the finding could not be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process." Therefore, this finding was reviewed by the Regional Branch Chief in accordance with IMC 0612, Section 05.04c, and determined to be of very low safety significance (Green) because in no case was the improperly installed scaffolding determined to adversely impact the operability of safety-related equipment.

The issue was a Non-Cited Violation of Criterion XVI of 10 CFR 50 Appendix B.
Inspection Report# : 2004004*(pdf)*

**Significance:** G Mar 31, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
**FAILURE TO PROMPTLY IDENTIFY AND CORRECT LUBE OIL ON THE 2B AUXILIARY FEEDWATER PUMP.**
A finding of very low safety significance and an associated Non-Cited Violation (NCV) was self-revealed when the licensee failed to promptly identify and correct a condition adverse to quality. Specifically, the licensee failed to identify the cause and take prompt corrective actions to correct a malfunction in the Unit 2 Train B auxiliary feedwater pump bearing oil system that caused bearing oil system that caused bearing oil leakage in December 2003. On January 14, 2004, the pump bearing oil system again malfunctioned and leaked oil in a similar manner. This resulted in the licensee taking additional unavailability time in January to identify the cause and repair the oil system to prevent future leakage. This deficiency affected the cross-cutting areas of Human Performance and Problem Identification and Resolution. Human Performance was affected because a non-licensed operator did not adequately verify oil in the site glass when the pump was returned to standby condition on January 14, 2004. Problem Identification and Resolution was affected because, although the licensee had an opportunity to identify and correct the cause for this condition in December 2003, the cause was not correctly identified at that time. The licensee has since repaired the pump and successfully performed six reliability runs with no subsequent leakage, and plans to complete similar repairs to the other three auxiliary feedwater pumps.

This issue was more than minor because it affected the equipment performance attribute of the mitigating systems cornerstone objective to ensure the reliability and availability of systems that respond to initiating events to prevent undesired 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 failure to correct the malfunction in December 2003 was considered a violation of 10 CFR 50, Appendix B, Criterion XVI.
Inspection Report# : 2004002*(pdf)*

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# Barrier Integrity

**Significance:** G Dec 31, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
**INADEQUATE PROCEDURES ASSOCIATED WITH CALCULATING, REVIEWING AND APPROVING DILUTIONIS AND BORATIONS**
A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 regarding procedure quality was self-revealed when operators miscalculated a boron addition for Unit 2, resulting in a greater than desired reduction in reactor coolant temperature. The primary cause of this finding was related to the cross-cutting area of Human Performance. Specifically, the operators failed to show adequate self-checking and technical rigor resulting in a boron addition twice as large as required. Upon recognizing the excessive temperature change, the operators properly diluted to restore reactor coolant temperature and subsequently initiated procedure changes to control the calculation and review of boration and dilution activities.

The finding was more than minor because it affects the Barrier Integrity Cornerstone objective of providing reasonable assurance that the physical design barriers of fuel cladding protect the public from radio nuclide releases caused by accidents or events, and was associated with the attribute of human performance and procedure adherence related to reactor manipulation. The finding was of very low safety significance because the fuel cladding barrier was not degraded and the reactor coolant system temperature remained within the operating criteria.
Inspection Report# : 2004009*(pdf)*

**Significance:** G Mar 31, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
**FAILURE TO FOLLOW RESULTS IN INOPERABLE CONTROL ROOM VENTILATION FILTRATION ACTUATION SYSTEM.**
A finding of very low safety significance and an associated NCV was self-revealed when a non-licensed operator (NLO) failed to follow written procedures during the restoration of control room ventilation after securing the 2B auxiliary feedwater pump. Specifically, the NLO started the control room office ventilation system prior to securing the control room ventilation system from the make-up mode. This resulted in the inoperability of the control room ventilation filtration actuation system. Upon identification that control room office ventilation system was started prematurely, it was secured. The primary cause of this violation was related to the cross-cutting area of Human Performance because the NLO failed to follow procedure.

The issue was more than minor because the failure to follow written procedures resulted in the inoperability of the control room ventilation filtration actuation system was similar to the greater than minor examples of Section 2 of Inspection Manual Chapter 0612. The finding was of

very low safety significance because it only represented a degradation of the radiological function provided for the control room. The failure to follow procedures was a non-cited violation of Technical Specification 5.4.1(a).
Inspection Report# : 2004002*(pdf)*

## Emergency Preparedness

## Occupational Radiation Safety

## Public Radiation Safety

## Physical Protection

Physical Protection information not publicly available.

## Miscellaneous

Last modified : March 09, 2005