

# Byron 1

## 2Q/2010 Plant Inspection Findings

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### Initiating Events

**Significance:**  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

#### **WATER INTRUSION LEADS TO LOSS OF ANNUNCIATORS (SECTION 1R15.b)**

The inspectors identified a finding of very low safety significance and associated NCV of Byron Operating License Condition 2.C(6) for Unit 1 and 2.E for Unit 2 for the licensee failing to provide an adequate floor drain system as required by the Fire Protection Program. Specifically, the floor drain system in the Upper Cable Spreading Room (UCSR) was not adequate to prevent firefighting water from entering the Control Room through the floor openings and affecting equipments. The licensee entered this issue into the CAP as IR 1046794 and subsequently sealed the UCSR floor.

The finding is greater than minor because it was associated with the protection against external factors 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 shutdown as well as power operations. The finding is of very low significance because safety equipment functions remained available to control room personnel. This finding was related to the cross-cutting area of Problem Identification and Resolution and its associated component for Corrective Action Program (P.1(d)) because the licensee failed to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. (Section 1R15.b)

Inspection Report# : [2010003](#) (*pdf*)

**Significance:**  Mar 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FIRE BARRIER WITH UNSEALED PENETRATION BETWEEN UNIT 1 AF PUMP ROOMS**

The inspectors identified a finding of very low safety significance and associated NCV of the Byron Unit 1 Operating License (OL), Condition 2.C.(6) for failure to comply with the fire barrier sealing requirements of the fire Protection Program (FPP). Specifically, a temporary rigging support used during initial construction was left in place and unsealed through a wall separating the Unit 1 Train A Auxiliary Feedwater (AF) pump room from the Unit 1 Train B AF pump room. The licensee entered the issue into the ocrrective action program (CAP) and sealed the fire barrier penetration.

This finding is more than minor because it was associated with the external factor attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the liklihood of those events that upset plant stability and challenge critical safety significance because there was not a significant degradation of the gaseous suppression system and the fire barrier degradation was also screened to Green due to the lack of a credible fire damage state (FDS) 3 scenario. This finding does not have a cross-cutting aspect due to its age.

Inspection Report# : [2010002](#) (*pdf*)

**Significance:**  Sep 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

#### **INADEQUATE EVALUATION OF SEISMIC RESTRAINT ON THE FHB CRANE TROLLEY**

A finding of very low safety-significance and associated Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for failure to perform an adequate evaluation of seismic restraint on the Fuel Handling Building (FHB) crane trolley. Specifically, for evaluation of the seismic

restraint in their single failure proof trolley analysis, the licensee failed to use adequate seismic acceleration values and failed to evaluate the connections for resulting reaction forces. Subsequent review found that the restraint was inadequate. The licensee documented the condition in Issue Report (IR) 934467 and initiated actions for calculation revision and installation of a field modification.

The inspectors determined that the failure to perform an adequate analysis for the seismic restraint and its connections for seismic loads was contrary to American Society of Mechanical Engineers (ASME) NOG-1-2004, requirements and was a performance deficiency. The FHB crane is designed to Seismic Category I requirements and the licensee used compliance with ASME NOG-1-2004, as the design basis for their upgrade to a single failure proof crane. The finding was more than minor because it was associated with the Initiating Events cornerstone attribute of Equipment Performance, Refueling/Fuel Handling equipment, and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors evaluated the finding using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and based on a "No" answer to all the questions in the Initiating Events column of Table 4a, determined the finding to be of very low safety-significance (Green). This finding has a cross-cutting aspect in the area of Human Performance, Work Practices because the licensee did not provide adequate oversight of work activities, including contractors, such that nuclear safety is supported. H.4(c)

Inspection Report# : [2009004](#) (pdf)

**Significance:**  Sep 01, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Untimely Corrective Actions for Sprinkler Obstructions**

The inspectors identified a Green NCV of Byron License Condition 2.C.(6) for Unit 1 for failure to take timely corrective actions as described in the Fire Protection Program to address a previously issued NCV regarding sprinkler obstruction by scaffolding in the 1A diesel oil storage tank room. Specifically, the licensee did not fully evaluate the issue before reinstalling a different type of scaffold planks. After the licensee concluded the plank was not acceptable, there was no full extend of condition walkdown until 5 months later and no modification to the scaffold until the inspectors identified the condition in August 2009. The initial violation was originally identified by NRC inspectors in April 2008.

This finding is more than minor because it was associated with the external factor attribute of the Initiating Events (IE) cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding is of very low safety significance because it has a low degradation rating as only one out of 11 sprinklers in the room was obstructed and there was another functional head within 10 feet of the combustible concern. This finding has a cross-cutting aspect in the area of Human Performance for Resources (H.2(a)) because the licensee failed to minimize long standing equipment issue. The licensee immediately removed the scaffold obstruction and entered this issue into the CAP as Issue Report (IR) 953448. (Section 4OA2.3)

Inspection Report# : [2009008](#) (pdf)

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## **Mitigating Systems**

**Significance:**  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO APPROPRIATELY ANALYZE THE DEGRADED VOLTAGE TIMER SETTINGS**

A finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, Design Control, was identified by the inspectors for the licensee's failure to have an appropriate analysis for the second level undervoltage (degraded voltage) relay timer settings. Specifically, Byron's analysis EC 377631, "Evaluation and Technical Basis for the AP System Second Level Undervoltage (Degraded Voltage) Time Delay Settings," dated February 3, 2010, failed to demonstrate the ability of the permanently connected safety-related loads to continue to operate for 5 minutes and 40 seconds without sustaining damage during a worst case, non-accident degraded voltage condition. The licensee entered this issue into their corrective action program as IR 1071667.

The performance deficiency was determined to be more than minor because the finding affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, there was reasonable doubt as to whether the permanently connected safety-related loads would remain operable during a worst case, non-accident degraded voltage condition for the duration of the time delay chosen. This finding is of very low safety significance (Green), because the design deficiency was confirmed not to result in loss of operability or functionality. After consulting with the Office of Nuclear Reactor Regulation (NRR), the inspectors identified a cross-cutting aspect associated with this finding in the area of human performance, decision making because the licensee did not use conservative assumptions based on NRC approved changes to the licensing basis in choosing the worst case degraded voltage condition in their February 2010 analysis. Specifically, in their February 2010 analysis, the licensee chose 75 percent of nominal voltage as their lower limit of degraded voltage (based on a not formally approved manual action), opposed to the worst possible degraded voltage of approximately 66 percent of nominal (first level undervoltage setpoint). (IMC 0310, Section 06.01.a. (2))  
Inspection Report# : [2010003](#) (pdf)

**Significance:**  Jun 30, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**0B FIRE PUMP DISCHARGE VALVE DISCOVERED CLOSED (SECTION 1R12)**

A self-revealed finding of very low safety significance and associated Non-Cited Violation of Byron Operating License Condition 2.C(6) for Unit 1 and 2.E for Unit 2 for the licensee's failure to identify the separation of the 0B Fire Pump discharge valve, 0FP018B, valve stem and valve disk. As a result, the mitigating functions associated with the 0B Diesel driven fire pump would not be assured. The licensee entered this issue into the Corrective Action Program (CAP) as Issue Report (IR) 1063395 and repaired the valve.

The issue is more than minor because it affected the Mitigating Systems Cornerstone attribute of Protecting Against External Events and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Based on a Phase 3 significance evaluation, the finding is determined to be of very low safety significance. The primary cause for this finding was related to the cross-cutting area of Problem Identification and Resolution and its associated component for Corrective Action Program (P.1(c)) because licensee personnel failed to identify the discharge valve's functionality was impacted by its degraded state. (Section 1R12.b)

Inspection Report# : [2010003](#) (pdf)

**Significance:**  Dec 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO COMPLY WITH 10 CFR PART 26.203(b)(2)**

The inspectors identified a finding of very low safety significance and the associated NCV of 10 CFR Part 26.203(b) (2), "Procedures," for the licensee's failure to adhere to work hour rule procedures. Specifically, a licensed reactor operator who was working an outage work hour schedule on Unit 1 was assigned as the online unit, Unit 2, Assist Operator without meeting the online work hour requirements. Subsequently, the licensee clarified the requirements for scheduling personnel and entered this issue into their corrective action (CAP) program as Issue Report (IR) 882727.

The finding was more than minor because the finding could lead to a more significant safety concern. The finding is of very low safety significance because there were additional operators in the control room that satisfied the work hours requirements and the operators were required to perform peer check before any control room equipment manipulation were taken. This finding has a cross-cutting aspect in the area of Human Performance, Resources Component (H.2(b)), because there were insufficient qualified personnel to maintain work hours within the working hours guidelines.

Inspection Report# : [2009005](#) (pdf)

**Significance:**  Sep 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

## **DIESEL OIL STORAGE VENTS DO NOT SEISMICALLY QUALIFIED OR TORNADO RESISTANT**

A finding of very low safety significance and associated NCV of 10 CFR 50, Appendix A, Criterion 2, "Design basis for protection against natural phenomena," and Criterion 4, "Environmental and natural effects design bases," was identified by the inspectors for the failure to seismically support and protect from tornado generated missiles the DG fuel oil storage tank vent lines. Specifically, the licensee installed the vent lines as non-safety related and as such they were not seismically supported nor protected from tornado generated missiles. In response to the issue, the licensee performed an operability determination and concluded that the DGs remained operable.

This performance deficiency was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of equipment performance and adversely affected the cornerstone objective of ensuring availability of the DG to respond to initiating events to prevent undesirable consequences. This finding was of very low safety significance (Green) because the inspectors determined that the finding was a design deficiency confirmed not to result in loss of operability or functionality and the finding screened as Green using the Significance Determination Process Phase 1 screening worksheet. The inspectors did not identify a cross cutting aspect associated with this finding because the performance deficiency occurred over 30 years ago and was not current.

Inspection Report# : [2009004](#) (*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**

**Significance:**  Dec 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **FAILURE TO COMPLY WITH 10 CFR PART 20 APPENDIX G**

The inspectors identified a finding of very low safety significance and the associated NCV of 10 CFR Part 20, Appendix G, Section III.A.3. Specifically, the licensee did not establish a Quality Assurance Program sufficiently to assure conformance with 10 CFR 61.55, in that, the program was not adequate to identify incorrect waste stream data was used to determine the concentrations of radionuclides, and ultimately ensure waste was properly classified, in accordance with 10 CFR 61.55. The licensee entered the deficiency into its CAP (IR 950082) and re-evaluated these shipments using the appropriate waste stream radionuclide distribution and correctly determined that the waste classification remained Class C.

The failure to establish an adequate 10 CFR Part 61 Quality Assurance Program, to assure conformance with 10 CFR 61.55, is a performance deficiency that was reasonably within the licensee's ability to foresee and correct, which should have been prevented. The finding is more than minor because, if left uncorrected the performance deficiency could have the potential to lead to a more significant safety concern. This finding was determined to be of very low safety-significance because no radiation limits were exceeded, there was no breach of packaging, there was no package certificate of compliance finding, there was no low level burial ground non-conformance, and no failure to make notifications or provide emergency information. The cause of this finding was related to the cross-cutting area of Human Performance, Resources (H.2(b)) due to inadequate training and insufficient qualified personnel.

Inspection Report# : [2009005](#) (*pdf*)

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## Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

**Significance:** N/A Sep 01, 2009

Identified By: NRC

Item Type: FIN Finding

### PI&R Summary

The inspectors concluded that the licensee's corrective action program (CAP) in general was effective in identifying, evaluating and correcting issues at the site. The licensee had a low threshold for identifying issues and entering them into the CAP. Overall, the issues were properly prioritized and evaluated based on plant risk and uncertainty.

Corrective actions, when specified, were generally implemented in a timely manner, commensurate with their safety consequences. The use of operating experience was found to be effective and was integrated into daily activities. In addition, the licensee's self-assessments, audits and effectiveness reviews were thorough and effective in identifying site performance deficiencies, programmatic concerns and improvement opportunities. On the basis of the interviews conducted, site personnel were free to raise safety concerns through the established processes.

Inspection Report# : [2009008](#) (*pdf*)

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